MARKETING STRATEGIES OF INDIAN RAILWAYS

FOR CEMENT TRANSPORTATION

ABSTRACT OF THE THESIS

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BY

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1. Background

Cement is one of the eight most important bulk commodities carried by the Indian Railways. The other commodities are coal, iron and steel, fertilizers, foodgrains, raw material for steel plants, petroleum products and iron ore for export. Originating loading of these commodities forms about 89 percent of the total freight traffic on the Railways. The Railways carried 46.25 million tonnes of cement during the year 2002-03. This traffic formed about 9 percent of the total revenue earning traffic (518.74 million tonnes) carried by them during the year.

As against 46.25 million tonnes of cement carried by Indian Railways, the total cement despatches, during the year 2002-03 were, however, 111.07 million tonnes. The rest of it was dispatched, mostly, by road and, to some extent, by waterways. In the year 1995-96, the railways carried 45 percent of the cement dispatched. This share came down to 39.7 percent in a span of seven years.

Cement is a high rated commodity and its transportation is profitable for the Railways. The Railways have, therefore, been concerned about the loss in share of this traffic. They have been devising strategies over the past few years to reduce this loss. However, the Railways continue to lose this traffic to roadways.

In this background, it has become necessary to analyse the reasons for the continuing decline in share. This study makes an effort to analyse this situation, keeping the problems, of the cement industry, with the Railways, in view.

2. Significance and Relevance of this study

As we know, railways are more suitable for movement of bulk commodities over long leads. Most of the large cement plants, producing 5 lakh tonnes or more of cement per year, are having their private railway sidings which help them to receive the raw materials inside their plants without involving any secondary transportation.

A study of the causes of the decline in the share of railways for cement transportation, therefore, is necessary. This study is significant for the Railways as it comes up with suggestions for changes in the present marketing strategies of the Railways. The cement industry have given their views on these strategies and have suggested what changes they would expect from the Railways so that more cement could be dispatched by rail.

This study makes an attempt to see how far the Railways can accommodate the views and suggestions within the existing framework of their policies and rules. It also examines to what extent the Railways should change in their marketing strategies to provide greater satisfaction to the cement industry.

This study has, therefore, great relevance for the cement industry as well as to the Railways. Any improvements in the marketing strategies or evolution of new marketing strategies will benefit the Railways as transporters of cement and also the cement industry as a major customer of the Railways.

3. Objectives and Limitations of this study

This study critically examines the problems of the cement industry and also of the Indian Railways in the context of finding out the reasons for the fall in the share of the Railways in transportation of cement. The main objectives of the study are :-

(i) To study the existing marketing strategies of the Indian Railways with reference to the transportation of cement.

(ii) To determine and analyse the reasons for the fall in the rail share of cement transportation moving by rail over the past few years.

(iii) To suggest the marketing strategies for the Indian Railways to improve their share in cement transportation.

The study has some limitations too. While its focus is the transportation of cement by rail, the suggested marketing strategies are based on the views of the cement industry in the backdrop of their problems in rail transportation. However, the Railways transport a number of other commodities like foodgrains, fertilizers, coal, steel and iron ore etc. for which the railway rules are uniformly applicable. It is difficult for the Railways to discriminate between one group of customers and the other as they are the common carriers and are owned by the Government of India.

Another limitation of this study was the availability of data with the cement industry for the period prior to 1990-91 as some of the cement plants have come up in the last few years only.

The feedback from the cement industry suggests that certain organisational changes in the Railways would be necessary to provide greater satisfaction to their customers. This study did not analyse such suggestions as these require an exclusive in depth study of Railways' organisational structure.

4. Overview of Literature

A number of studies have been conducted by the Railways, the RITES, and some other private agencies, to go into the marketing strategies of the Indian Railways. Some private agencies were also engaged by the Railways for conducting studies in specific areas. Certain individuals have also studied various aspects of the freight traffic on the Railways. The competitiveness of the Railways has also been studied. Some of the important studies done in the above field are briefly described in the following paragraphs.

Rail India Technical and Economic Services (RITES), published a report on "Decline in the Railways Share of Total Land Traffic" in the year 1997. This study analysed the traffic flows of all commodities, amenable to movement by rail, along with the problems of line capacity on the trunk routes connecting the cities of Delhi, Mumbai, Kolkata and Chennai. The study concluded that the Railways are not able to carry the offered traffic, along the major routes. This limitation of the Railways has pushed the potential customers to use the road transport as an alternative. The study recommended that all the Railways should upgrade the freight terminals to improve the terminal operations. The report does not specifically cover the problems faced by the cement manufacturers or consumers.

Another study in ' Competitiveness of Rail Sector in Movement of Steel" was undertaken by Manoj Singh in 1998. The study recommended changes in the pricing structure of railway freight, reduction in transit time, quick settlement of claims and making commercial rules more flexible and unambiguous.

The Ministry of Railways entrusted another study on the "Factors Impacting the Total Share and Trends in Industry Logistics" to M/s.A.F. Ferguson and Company, who submitted their report in 1999. The report lists out the key transport problems of the customers with the Railways and classifies them into two major heads, namely, operational and commercial. The report, however, does not deal with the specific problems of the Railways and their customers in transportation of cement traffic.

The Government of India had constituted an Expert Group on Railways, under the chairmanship of Dr.Rakesh Mohan. The group submitted its final report in July 2001. It suggested the introduction of a yield management system with variable pricing for customers, based on dynamic demand situation. As a marketing strategy in

the freight area, it suggested a strategy of efficient scheduling of freight trains along with the modernisation of the Indian Railways.

Another Report titled "Indian Railways – An Agenda for Change" was submitted by the Railway Advisory Committee in the year 2001. This report deals, mainly, with the restructuring strategy for commercialization of the Indian Railways.

Parthasarathy and Chakravarty, published a book titled "Cement Industry: The Emerging Scenario", in 1988. The authors state that the rating policy of the road transport is more flexible than that of the rail transport. With the emergence of freeways and heavier multi-axle trucks, road transportation is becoming cheaper besides having the inherent advantage of its ability to provide door-to-door facility. The book highlights the difficulties of the cement industry with respect to railway transportation but does not suggest any marketing strategies for the Railways.

The Ministry of Railways published two "Status Papers on Indian Railways" in May 1998 and May 2002, highlighting the "Issues and Options" before the Railways. These papers focus on the need to sharpen the marketing capability of the Indian Railways through constructive pricing mechanisms and tariff rationalisation and also through customer focus. However, these papers do not give, in detail, the customer focus strategies to be adopted by the Railways.

Another report titled, "The Potential for Rail Freight" was published by the National Economic Research Associates for the office of the Rail Regulator, London (U.K.). This report studied the reasons for fall in share of rail freight traffic in British Railways and identified price, service quality, reliability and flexibility as the factors which are important to the customers of rail freight in Great Britain.

R.K. Thoopal, published a book titled "Vision 2010 – Indian Railways" in February 2000 and suggested that:

- Railway freight pricing has to be in tune with cost and price of competing transport sectors.
- Cross-subsidisation of passenger traffic services should be reduced to a minimum by reducing freight service rates.
- Preferential Traffic Schedule of the Railways should apply to only10% of their wagon fleet. The rest of the wagon fleet should be committed on

contract to individual customers.

- The Railways should give more concessions to customers having a higher share in rail traffic.
- Demurrage should be an incentive. It should not be punitive.
- Railways should have strategic tie-ups with the warehousing industry.
- Railways should introduce 'e-commerce' for dealing with major freight customers.
- The Railways should move away from rail orientation to transport orientation.

However, these suggestions need to be examined in detail, particularly, with reference to cement transportation.

5. Outline of the Research Methodology

The research methodology used for this study was designed to meet the objectives of this study as stated earlier.

Data Collection Procedure

The universe of study consisted of 489 cement manufacturing units in the country as existing on 31.3.2002. These included 365 "mini" cement plants, which produced only around 4 million tonnes of cement in the year 2002. The remaining 124 large cement plants, having a manufacturing capacity of 135.03 million tonnes, produced 102.4 million tonnes of cement in the year 2002.

The sampling frame, therefore, consisted of only the "large" cement plants with a cement plant taken as the sampling unit.

The sampling size was selected keeping in view the requirements of efficiency, representativeness, reliability and flexibility. A sample size of 20 percent was selected. Thus 29 "large" cement plants were selected out of a total of 124 "large" cement plants for the collection of data.

Sampling Procedure :

Probability sampling method has been employed. Area sampling method was used for the cement manufacturing units in different geographic clusters in the country. The clusters of cement plants taken for the study are present in the states of Andhra Pradesh (21 Plants), Rajasthan (14 Plants), Tamil Nadu (13 Plants), Gujarat (10 Plants) and Madhya Pradesh (10 plants).

An effort has been made to get samples from each State having a sizable number of cement manufacturing units located in it. The necessity of getting samples from the other States was also kept in mind so that the all India character of the study is maintained.

Data Collection

The data used for this study have quantitative as well as qualitative dimensions. To collect the relevant data, both primary as well as secondary sources have been utilised.

Primary Sources

The sources of primary data are the cement plants, the cement customers and other members of the trade and industry.

Research Instruments for Collection of Primary Data

The research instruments, used for the collection of primary data, are:

- Structured Questionnaire
- Interviews / Schedules
- Seminars

Structured Questionnaire

The questionnaire for the study was divided into two parts. The first part dealt with the qualitative dimensions while the second part attempted to deal with the quantitative dimensions of the data obtained from the cement manufacturers. Five questions were designed to obtain data on qualitative dimensions.

(i) Relative importance of the various parameters of the transport mode:

(ii) Comparative attitudes of consumers towards various facets of rail and road transport:

(iii) Preference of consumers towards mode of transport with their reasons;

(iv) Problem areas in rail transport; and

(v) Relative importance and priorities of the measures to improve the railway freight services.

The second part of the questionnaire consists of seven questions, designed to obtain data on quantitative dimensions.

(i) Production/dispatches of cement for the period 1990-91 to 2001-02;

(ii) Distribution channels used by the cement companies;

(iii) Classification of customers on the basis of monthly dispatches;

(iv) Relative use of distribution channels for cement dispatches;

(v) Zonewise pattern of cement dispatches;

(vi) Comparison of road and rail dispatches of cement for the period 1991-92 to 2000-01; and

(vii) Components of the landed price for three important destinations in each zone.

Personal Interviews / Schedules

The structured questionnaire provided the data of the cement industry on qualitative as well as quantitative dimensions for the purpose of the study. These data were given by the cement manufacturing units. However, it was also necessary to have the views of the marketing officers and transport advisers of some of the cement companies. The views of some of the retired and serving railway officers were also obtained. The views highlighted some of the reasons why the cement traffic is getting diverted to other modes of transport.

Seminars

These seminars were held with a view to discuss the existing marketing strategies of the Indian Railways and also to have suggestions for evolving new strategies to improve the share of the Railways. In these seminars, members of the trade, industry, road transporters, marketing managers of the Container Corporation of India, the railway operating and commercial officers, and the road transporters were present.

Secondary Data Collection

Secondary data have been collected from a large number of sources. These include:

(i) Publications of the Ministry of Railways regarding data on Railways and their share in the transportation of cement over the years.

(ii) Publications of the Cement Manufacturers' Association.

(iii) Articles and Papers on relevant topics published in management journals and magazines.

(iv) Books on Marketing, Services Marketing, Strategic Management, Cement Industry, Research Methodology and Statistics for Management.

(v) Reports on the Railways published by RITES and other consultants appointed by Railways.

(vi) Reports of committees appointed by the Central Government and the Ministry of Railways for studying the working and management of the Indian Railways.

(vii) Proceedings of seminars and discussions held at various fora on the issues related to transportation of cement by the cement industry.

(viii) Research work of scholars on the rail transportation of similar commodities.

Data Analysis

The qualitative dimensions of the study were rated on a 5 point scale. The mean ratings and rankings, from the scores given by the respondents in reply to each of the five questions, were worked out and tabulated. Bar charts were also drawn to represent the mean ratings and rankings of the various criteria.

The data on quantitative dimensions were available in response to the seven questions on these dimensions. An analysis of the data led us to the trend of growth of cement dispatches by road and rail over a period of ten years, the number and type of distribution channels used by the cement companies, the classification of customers on the basis of monthly dispatches, relative use of the distribution channels, zonewise patterns of cement dispatches, comparison of road and rail dispatches of cement for the period 1991-92 to 2000-2001 and the components of the landed price of cement, for three important destinations in each zone.

Findings and Conclusions

The findings of the study are based on the two types of dimensions stated above. These dimensions concern the following broad strategic areas in cement transportation.

- Freight Charges
- Flexibility
- Transit Time
- Reliability including loss/damage enroute
- Settlement of Claims
- Customer Satisfaction
- Wide Reach

These areas have been analysed and linked to the present marketing mix of the Indian Railways.

Pricing of Rail Transport

Railway freight is higher than the road freight by twenty to thirty percent. Rail movement involves additional handling charges as well as incurring of expenditure on secondary freight, from the unloading station to the dealers' premises, because the Railways do not provide any storage/stacking facilities. Demurrage and wharfage charges are levied for movement by rail only. The delay in settlement of claims adds to the cost of cement companies. The Railways have increased the size of the rakes and the cement companies have to incur extra costs to handle such rakes in their

private sidings for cement loading. The cost of gauge conversion and electrification of sidings is heavy for the cement companies if the Railways do not share it.

Distribution – Reach of the Railways

The cement companies are not getting the required flexibility in despatching smaller lots of cement to individual destinations. They would like to have more two/three point rakes. To move rakes having higher pay loads, the cement companies would require that the Railways should permit clubbing of demands more freely. Higher transit time in rail movement and non-provision of warehousing at the terminals is causing dissatisfaction among the cement companies. They would like the Railways to permit changing of destinations of the rakes more freely.

Process

The cement industry finds little flexibility in the application of railway rules to them as these are rigid and allow very little discretion to the frontline staff. The rules regarding demurrage and wharfage should take into account the genuine difficulties of the customers. The maintenance of railway goods sheds and their circulating areas is unsatisfactory causing inconvenience in loading and removal of consignments by the customers.

The Railways should introduce the system of credit/debit of demurrage hours on the same lines as they have done for the steel plants. There are long delays on the part of the Railways to decide on concessional schemes like Station to Station Rates, Volume Discount Scheme and Own your Wagon Scheme. The Own Your Wagon Scheme should be made more customer friendly.

The Railways should be more transparent in the application of rules to their customers. The rules are complicated and inflexible. The Railways do not issue the railway receipts on Sundays and holidays. They also demand bank guarantees for payments made by cheque. The procedure of allotment of wagons by the Railways is complicated and the frontline staff do not explain the procedure to the customers.

The Railways also do not provide an accurate forecast about the supply of rakes for loading. Information about rakes in transit can be provided through the Freight Operations Information System terminals. This should be provided to the major cement customers by the Railways. Delivery of consignments on Indemnity Bond should be made easier by reducing the formalities involved.

The settlement of claims is, invariably, delayed. Sometimes, even genuine cases are rejected. Movement by rail involves multiple handling as door to door service is not provided by the Railways. Multiple handling also results in damage to or the loss of consignments.

Product

The Railways do not guarantee supply of rakes as per the demand of the cement companies. For customers having a demand level of more than 1000 tonnes/month, the rake size should be reduced till, as per an agreed time frame, adequate facilities for loading/storage are developed by the cement companies at the two ends. More 2/3 point combinations, with the benefit of "train-load" freight should be given upto the last point of the destination of the rake. The maximum distance for mini rakes should be increased from 300 to 400 kilometers irrespective of the zonal railway on which the movement takes place. The Railways should provide warehousing facilities at the unloading points to reduce multiple handling of cement consignments. The long lead cement traffic should be segmented and targetted for 100 percent of its movement by rail so that traffic can be diverted from road to rail. The Railways should supply fit, clean and watertight wagons for loading.

To attract more traffic to rail, movement of cement in bulk should be planned to large consumption centres like Delhi, Kolkata, Chennai, Bangalore etc. by providing specially designed wagons for the purpose.

Physical Evidence

Physical evidence of rail transport includes:

a) The wagons/rakes supplied for transportation of cement.

b) The railway receipts issued after booking of consignments.

c) The goods sheds and offices at cement handling points on the Railways.

d) The stations/yards sidings at the originating points of cement traffic.

e) The railway locomotives used for hauling the rakes.

f) Railway staff, in uniform, at the cement handling points.

People

The provision of railway transport service for cement involves the railway employees who render this service. The behaviour of the railway employees towards their customers and the accessibility of railway officers to the representatives of the cement industry together determine the quality of service rendered by the Railways to their customers. Thus recruitment, training and motivation of the railway staff and officers are important dimensions for determining the type of interaction between the Railways and the cement industry.

Productivity and Quality of Service

These two elements, often treated separately, are strategically interrelated because neither of the two elements can be addressed in isolation. The Railways have been trying to keep their costs on passenger traffic under control by subsidising the same from the revenues earned from freight traffic. This has resulted in an increase in the freight rates for most of the commodities. The cement industry feels that, over the past few years, the railway freight rates for cement have become uncompetitive with road rates, mainly, because of this reason.

Service quality refers to the degree to which the rail transport service for cement satisfies the customers. Service quality is essential for the Railways to have product differentiation and build customer loyalty.

Reliability of rail transport and loss/damage to consignments enroute are the two major factors affecting the quality of service rendered by the Railways to the industry.

Promotion

The problems of communication between the Railways and the cement industry are:-

a) Lack of adequate information about availability and movement of rakes till these reach their destination.

b) Change of policies by the Railways to have bigger size of rakes for movement of cement traffic without giving adequate opportunity and information to the cement industry to remodel their sidings to suit the bigger size of rakes.

c) Changes made in the demurrage/wharfage rules without consulting and taking into account the problems of cement industry have made the cement customers unhappy.

d) Non-involvement of the cement industry in implementing the 'Engine-On-Load' concept for loading and unloading of cement.

e) Non-involvement of private parties including the cement industry in designing or improving warehousing and terminal facilities for handling of cement traffic.

f) Own Your Wagon Scheme should be made user friendly and acceptable by having detailed discussions with the cement industry.

g) Availability of railway rules and procedures, freely to the cement industry, is not being ensured by the Railways.

Recommendations

Based on the conclusions of the study, specific marketing strategies for each element of the marketing mix for the Indian Railways have been recommended.

Pricing

The Railway Board should grant full powers to the General Managers to grant station-to-station rate (STS) freight rebate beyond the limit of 10/12 percent. The strategy of granting rebate, under STS scheme, after examination of individual cases should be continued. In cases of idling of railway's rolling stock, the marginal cost, at least, must be recovered under the STS scheme. However, the time taken, in deciding such cases, must be substantially reduced.

The Railways' policy of granting 2 percent concession to its premier customers must be continued. At the same time, the new strategy of providing warehousing at the unloading terminals should be, vigorously, pursued by the Railways. The private parties must be encouraged to set up unloading terminals, exclusively, managed by them.

The Railways have decided to give relief to the siding holders by giving them the benefit of telescopic freight rates based on the through distance upto the dead end of siding. This policy should be continued by them.

To encourage loading of cement by rail, the Railways should share the costs of remodelling of the sidings, gauge conversion and electrification of sidings with the cement siding holders on mutually agreed terms on a case to case basis. The cost of train examination and commercial staff posted in the sidings should be borne by the Railways. The Railways should encourage development of loading and unloading facilities by giving incentive to the siding holders to accept the "Engine-on-Load" system.

The condition of unloading terminals needs to be improved by providing better lighting arrangements and proper circulating areas. Pending these improvements, the Railways should be more liberal in waiving off demurrage and wharfage charges on consignments handled at such terminals.

The claims on damaged/lost consignments must be paid promptly without waiting for inter-railways liability to be fixed.

Finally, the cross-subsidisation of passenger and low rated freight traffic by charging higher rates for other freight traffic should be stopped. In the mean time, it should be substantially reduced.

Distribution – The Reach of the Railways

The Railways need to improve their reach by having a better distribution system. The instructions regarding change of destination of indents should be reiterated and widely circulated.

'Mini' Rakes should be permitted for loading, round the year, upto leads of 400 kilometers. The Railways should permit more 2/3 point combination rakes in cases where the traffic can be diverted from road to rail.

The facility of clubbing 12 consignments in a broad gauge wagon should be continued.

The Container Corporation of India should provide inter-modal transportation to help the Railways become total logistic providers.

Process

- The authority to waive off demurrage/wharfage should be delegated to the field level to dispose of, at least, 50 percent of such cases.
- Free time for loading and unloading should be reviewed, keeping in view the facilities being developed by the customers, to reduce the same over an agreed timeframe.
- Railway staff should inform their customers, sufficiently in advance, about the expected arrival of railway rakes.
- Credit/Debit system of demurrage hours should be introduced.
- Rules regarding levy/waival of demurrage/wharfage should be made easily available to the customers.
- Punitive charges for overloading of coal wagons from certain collieries to the cement plants should be reduced.
- Railways should improve the maintenance of goods sheds and the circulating areas and privatize their maintenance.
- The security of these areas should be given to private security agencies.
- These contracts should be awarded by the commercial department of the Railways.

- Adequate funds should be earmarked for the above purposes.
- More covered space/sheds should be provided at terminals.
- The process of granting Station to Station rates should be completed within 30 days.
- The newly announced scheme, granting 2 percent rebate to Railway's premier customers, should be continued.
- Own Your Wagon Scheme should be made more user friendly.
- The procedure of allotment of wagons should be simplified.
- Planning for provision of wagon fleet should be reviewed to avoid situations of shortages of wagons, particularly, during the busy season.
- Railways should organise a system of giving advance intimation about supply of rakes to their customers.
- Freight Operations Information System should be provided at important sidings.
- The formality of asking for a surety for giving delivery on Indemnity Bond, should be dispensed with.
- Reputed cement companies should be permitted to make payment of freight by local cheques.

Product

- The Railways should change the Preferential Traffic Schedule to supply wagons on demand.
- The rated carrying capacity of railway wagons should be fixed keeping in view the actual quantity of coal carried.
- The cost of railway sidings for handling cement in bulk at the terminals should be shared by the Railways.
- The minimum rake size should be reduced to 35 covered eight wheeler wagons as an interim measure, for customers having at least 1000 tonnes/month rail movement.
- The entire quantity of cement traffic moving over leads of 1000 kilometers or more should be planned for movement only by rail. Station to Station Rates, should be granted, if necessary, to meet the competition.

- Railways should become total transporters of long lead cement traffic and arrange to provide door-to-door delivery to cement customers.
- Half-an-hour extra 'free time' should be given by Railways to clean the wagons supplied for loading.
- Water tight wagons should be supplied.

Physical Evidence

- Railways should improve:
  - Landscaping.
  - Circulating areas.
  - Approach roads.
  - Unloading space.
  - Design and layout of offices at the terminals where cement is handled.
- The Railway Receipts should be issued through computerisation.
- The Railways should close provider GAP4 by improving service delivery as well as communication with their customers.

People

- The Railways should close provider GAP 3 by reviewing recruitment and training procedures of the frontline staff so that they are responsive to the needs of customers.
- The Railways should increase the percentage of well qualified, directly recruited, frontline staff in group 'C' categories to improve the quality of staff in this category.
- Greater delegation of powers to the frontline staff, in day to day matters, must be ensured to serve the customers better.

Productivity and Quality of Service

- Railways should provide a guaranteed supply of wagons for loading a minimum agreed quantity with speedy transit.
- Rules should be made more transparent, simple and flexible.

- Real time information should be provided to customers through the FOIS.
- Change of destination should be allowed. The Railways should reiterate the instructions on the subject and ensure that the frontline staff follow the same.
- Settlement of claims should be done expeditiously

Promotion

- Computer terminals, of Railways' Freight Operations Information System, should be provided in the sidings of all major cement manufacturers at major cement unloading terminals.
- Minimum size of rake should be reduced to 35 eight-wheeler wagons for an agreed, but a limited period.
- The facility of two point rakes and mini rakes should be provided round the year.
- Demurrage and wharfage rules should be reviewed periodically.
- Incentives, including sharing the cost of remodelling of sidings should be given to the cement companies.
- The condition of existing railway terminals should be improved.
- Warehousing should be provided at major terminals.
- Own Your Wagon Scheme should be made customer friendly.
- To improve transparency in railway working, the rules and procedures should be made easily available.
- Railway rule books must be updated, published and widely circulated every year

Directions for Future Research

The research on the present topic has brought out a number of areas , which need further investigation. These concern the various marketing strategies of the Indian Railways in transportation of cement. At the same time, these areas are also vital for the marketing of other commodities including those commodities which have got diverted to other modes of transport, particularly, the roadways, for movement by rail.

The marketing strategies of the Railways for the following commodities also need to be studied in detail :

- Petroleum Products
- Steel
- Coal
- Fertilizers
- Iron Ore for Export
- Raw Materials (like gypsum & limestone) for steel plants

The organisation set up of the Indian Railways also needs a detailed study. The areas which need study are :

- The change from the present organisational setup to a customer-focussed one
- Simplification of rules & procedures to make them customer-friendly.
- Ensuring availibility of rakes to the customers.
- Improvements in the internal marketing of the Railways.
- Recruitment standards and processes.
- Training modules and methods
- Strategies for improving employee productivity

At present, the Railways are facing a conflict between their social responsibility and the commercial nature of the organisation. The Railways subsidize passenger traffic by increasing the freight rates. They carry a number of commodities like salt, fodder etc. which do not even pay for the cost of transport. There are a large number of uneconomic branch lines, which the Railways have to operate as a part of their social responsibility. The losses on account of all the above services have already been quantified. The following aspects of this problem can be taken up for future research :

- How to make the uneconomic branchlines viable.
- The imperatives of subsidizing passenger traffic in the present socio-political set up.
- The management of change for the Indian Railways.
- Tariff rebalancing and quality enhancement strategies for improving the share of transportation of non-bulk commodities for the Indian Railways.
- Marketing strategies of Railways for integration of rail, road and sea movement in order to have a seamless chain of movement of freight traffic.
- Strategies for improving speeds of freight trains.

Thus a number of studies are required in the above areas if we want to take comprehensive steps to arrest the decline in the share of Railways as transporters of freight traffic.

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PREFACE

The Indian Railways are more than 150 years old For a number of decades, they have enjoyed a monopolistic situation in the field of transport in the country The demand of rail transport had been far outstripping the supply until a few years ago In the field of passenger transportation over long leads, they still have a near monopoly as they are the cheapest mode of inland transport In fact, the railway passenger fares are the lowest in the world, and have not kept pace with the increase in the cost of transport It is not easy to suddenly, increase the fares to ensure that the passenger fares are not subsidised by the freight segment of rail transport

The freight traffic on the Indian Railways has been the profitable segment Their revenues from freight transportation have, over the years, subsidised the losses incurred by passenger transportation, the operation of uneconomic branch lines, new lines having negative rate of return and transportation of the low rated commodities This subsidy was of the order of Rs 3787 crores in the year 2002-03

With the opening up of the economy in the year 1990, the competition from the road transport increased due to gradual removal of controls and the beginning of an era of liberalisation in the economy The Railways found that their share of transportation of high rated commodities like cement and steel decreased while that of the roadways went up significantly

Even the regular customers of the Railways felt that the transportation of traffic by rail was becoming costlier Hence they started shifting towards roadways as the alternative mode of transport

In the late 1990s, a large number of Railways' rolling stock became surplus to the demand This caused serious concern to the Railways who ordered studies to be conducted to determine the causes of the loss of their market share, primarily, to the roadways The findings of some of these studies have been discussed in detail in Chapter II of this thesis However, none of these studies dealt with the Railways' loss of share in the transportation of cement

This situation gave rise to the need for conducting a study in this area. The present study was, therefore, undertaken under the auspices of the Aligarh Muslim University and the All India Management Association so that the causes of the loss of share in the cement traffic by the Indian Railways could be identified, the existing marketing strategies could be studied and analysed and an effort could be made to suggest modifications in the existing marketing strategies or to suggest new marketing strategies for the Railways.

The views of the customers of the Railways, particularly, those of the cement manufacturers, were, essentially required for ensuring that the recommendations should cover the view point of the Railways' customers and the problems faced by them in the transportation of cement by rail. A questionnaire, having qualitative and quantitative dimensions was, therefore, circulated to all the large cement plants in the country. For this purpose, the help from the Cement Manufacturers' Association and the and Ministry of Railways was taken so that authentic data could be made available for the study. In addition, interviews were held with the representatives of the cement industry, the Cement Manufacturers' Association and the transport advisors of some of the cement companies. After obtaining their suggestions and analysing the data available through the replies to the questionnaire, the findings of the study were drawn up. These findings were discussed with the concerned officers of the Ministry of Railways to make an assessment of the steps being taken by the Railways to make suitable changes in their marketing strategies for solving the problems of the cement industry and also for making the railway transportation system more customer friendly.

The final recommendations, therefore, take into account, the views of the cement industry as well as the views of the Ministry of Railways. New suggestions for changes in the marketing strategies have been given whereever it appeared that the present strategies are not being modified to suit the needs of the customers and solve their problems as perceived by them.

LAJPAT RAI THAPAR

DECLARATION

I do hereby declare that the thesis titled '**MARKETING STRATEGIES OF INDIAN RAILWAYS FOR CEMENT TRANSPORTATION'** submitted to the Faculty of Management Studies and Research, Aligarh Muslim University, Aligarh for the award of the Degree of ***DOCTORATE IN BUSINESS ADMINISTRATION*** *is a record of* original work done by me from October 2001 to September 2004, under the supervision and guidance of **PROF. KALEEM MOHAMMED KHAN,** Dean & Chairman, Faculty of Management Studies and Research, Aligarh Muslim University (Internal Adviser), and **DR. RAJ AGGARWAL**, Prof. Economics and International Business, Institute of Integrated Learning and Management (IILM) (External Adviser) and it has not, previously, formed the basis for the award of any degree, diploma, associateship, fellowship or other similar title to any candidate of any University.

Lajpat Rai Thapar

Place : New Delhi Signature of the Candidate

Date : 1/9/2004 **LAJPAT RAI THAPAR**

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CERTIFICATE

This is to certify that the thesis titled '**MARKETING STRATEGIES OF INDIAN RAILWAYS FOR CEMENT TRANSPORTATION'** submitted to the Aligarh Muslim University in partial fulfilment of the requirements for the award of the degree of **DOCTORATE IN BUSINESS ADMINISTRATION,** is a record of original research work done by **Mr.LAJPAT RAI THAPAR** during the period of his study in the Department of Business Administration, Faculty of Management Studies & Research, Aligarh Muslim University, under my supervision and guidance. This thesis has not formed the basis for the award of any degree/diploma/associateship/fellowship or similar title to any candidate of any University.

Place : Aligarh

Date : 2.9.04

PROF. KALEEM MOHAMMED KHAN
Internal Adviser

CERTIFICATE

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Place : New Delhi

Date : 1/9/04

Dr.Raj Aggarwal
External Adviser

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I am thankful to the members of the management faculty at the Centre for Management Education, All India Management Association, New Delhi, particularly Dr. Vigya Garg and Mr.Rupesh Goel, for their help in giving me access to the latest management literature available with the AIMA.

I gratefully acknowledge the help that I got from my friends and colleagues in the Ministry of Railways as well as on the various zonal Railways. Shri S.B. Ghosh Dastidar, General Manager, Central Railway and Shri P. Sudhakar, Chief Operations Manager, Southern Railway were of great help to me in getting the replies to the questionnaire from a number of cement manufacturers.

The Cement Manufacturers' Association helped me, not only in forwarding my questionnaire to all the cement plants in the country, but also in reminding them to send me the necessary details. Without their support, it would have been difficult to get the data that I received from the cement plants across the country. I am, particularly, thankful to Mr.Kamal Kishore,President of Maihar Cement Works and President of Madhya Pradesh Cement Manufacturers' Association,Satna for giving me valuable

inputs about the views of the cement industry and their problems in the transportation of cement by rail.

I must thank my colleagues, Shri Manoj Singh and Shri Nalin Singhal for having detailed discussions with me regarding the role that the Container Corporatiion of India can play in improving the market share of the Railways in cement transportation.

Shri Shiv Kumar Chowdhary, Executive Director Traffic Commercial (Rates), in the Ministry of Railways, discussed with me, at length, the problems faced by the cement industry and gave me an idea of what the Railways are doing to attract more cement traffic to the Railways.

Finally, I would like to thank my wife Shashi and my children Shalini and Vishal for being patient with me and for constantly encouraging me to complete my work.

LIST OF ABBREVIATIONS

No.	Abbreviation	Stands For
1.	BLCA	Bogie Low Wagon for Containers (Air Brake).
2.	BCN	Bogie Covered (Air Brake) Wagon.
3.	BCX	Bogie Covered (Vacuum Brake) Wagon
4.	BE	Budget Estimates.
5.	BIS	Bureau of Indian Standards.
6.	BOLT	Built, Own, Lease and Transfer
7.	BOX	Bogie Open Wagon (Vacuum Brake).
8.	CONCOR	Container Corporation of India.
9.	CSP	Consumer Stated Preference
10.	CTD	Combined Transport Document.
11.	ESP	Electro Static Precipitation.
12.	FMCG	Fast Moving Consumer Goods.
13.	FOIS	Freight Operations Information System.
14.	GDP	Gross Domestic Product.
15.	Govt.	Government.
16.	IR	Indian Railways.
17.	IRFC	Indian Railway Finance Corporation.
18.	IT	Income Tax.
19.	IWT	Inland Waterways Transport.
20.	Kg	Kilogram.
21.	KM	Kilometer.
22.	LRDSS	Long Range Decision Support System.
23.	MOR	Ministry of Railways
24.	mt	million tonne.
25.	MW	Mega Watt.
26.	NTKM	Net Tonne Kilometer.
27.	OPC	Ordinary Portland Cement.
28.	p.a.	per annum.
29.	POL	Petroleum, Oil, Lubricants.
30.	PPC	Pozzolona Portland Cement.
31.	RITES	Rail India Technical And Economic Services.
32.	Rd.	Road.
33.	RE	Revised Estimates.
34.	Rl.	Rail.
35.	RMC	Ready Mixed Concrete.
36.	STD	Subscriber Trunk Dialing.
37.	STS	Station to Station Scheme.
38.	TMS	Terminal Management System.
39.	UP	Uttar Pradesh.
40.	VDS	Volume Discount Scheme.
41.	Viz.	Videlicet.

LIST OF ANNEXURES

CHAPTER – I

INDIAN RAILWAYS- AN OVERVIEW

1.1 History, Functions and Organisational Structure

History

The Indian Railways began their first ever journey in the country on the 16th April 1853 when a fourteen-carriage train ran from Bombay to Thane – a distance of 21 miles. In the last 150 years, the Indian Railways have grown into a vast network of lines connecting various parts of the country, from North to South and from East to West. Indian Railways is the second largest in the world under a single management. Some of the important data about this vast network for the year 2002-03 is given in Table 1.1 (Year Book 2002-03).

Table 1.1 Important Data: Indian Railways 2002-03

Sl. No.	Description	Unit	2002-03
1.	Track Kilometers (BG, MG, NG)	Kms	109221
2.	Route Kilometers (BG, MG, NG)	Kms.	63122
3.	Electrified Route Kilometers	Kms	16456
4.	**Locomotives**		
	a) Diesel	No.	4699
	b) Electric	No.	2930
	c) Steam	No.	52
5.	Wagons	Units	214760
6.	Coaches	Units	44756
7.	Stations	No.	6906
8.	Staff	No.	1471850
9.	Passenger carried	Million	4971
10.	Freight Traffic	Million Tonnes	518.74
11.	Revenues	Rs. (Crores)	41068.20
12.	Expenses	Rs. (Crores)	38025.75
13.	Staff Cost (Regular Employees)	Rs. (Crores)	19914.80
14.	Stores	Rs. (Crores)	11598
15.	Operating Ratio	Percentage	92.34%

Figures taken from Indian Railways Year Book 2002-03

Indian Railways (IR) have played a crucial role in the political, social, and economic life of the country ever since its inception. IR's transportation network has been instrumental in weaving our country into a nation. Their role in times of war and natural calamities have been commendable, as they have always risen to the occasion to transport men and materials in large numbers at short notice. The glorious past and the performance of the Railways has made IR into one of the foremost institutions in the country. It enjoys the distinction of being the single largest employer in the country even today. The Indian Railways' track system consists of three types of gauges:

	Gauge	**Width**
1)	Broad Gauge	(5 feet 6 inches)
2)	Metre Gauge	(One metre)
3)	Narrow Gauge	(2 feet 6 inches)

The Broad Gauge system carries most of the IR traffic today. Metre Gauge track is also now being, gradually, converted into Broad Gauge under the gauge conversion programme. Narrow Gauge is available, mainly, in hilly areas like Kalka to Shimla in the north, Siliguri to Darjeeling in the east, and Mettupalayam to Ooty in the south. This network carries very little traffic and is important to the Railways only from the tourism point of view.

From 1850 to 1924, the Indian Railways consisted of a number of privately operated railway lines all of which were, taken over by the British Indian Government in 1924. From 1924 to 1947, the growth of the Indian Railways witnessed the addition of more routes in the central and western parts of the country, addition of more stations, construction of railway bridges, tunnels and the introduction of the electric traction. The number of passengers carried by the Railways increased from 24 million in 1901 to 72 million in 1927.

After the independence of the country in 1947, the Indian Railways made a significant contribution towards nation building. Apart from the movement of bulk freight traffic (cotton, jute, tea, sugar, coal etc.), the Railways provided the linkages between the economically forward and backward areas along with the transportation of essential building inputs to areas where multi-purpose infrastructure projects were being built. The Railways also introduced railway postal services. During this phase, the freight traffic increased, substantially, to 98 million tonnes in the year 1953 (The Indian Railways Report 2001).

The Railways, in India, gave a strong push to the social forces of urbanization and speedy and cheap movement of materials by railways, particularly, over long distances and in the absence of a dependable road network.

The Indian Railways is thus one of the key institutions that has helped to keep the country together as a united Republic. It is, therefore, essential for the Railways, not only to provide competitive transport services, but also to meet the social and strategic needs of the country (The Indian Railways Report 2001).

Major Functions

The major functions of the Railways are transportation of passengers and freight. They are also engaged in the provision of a number of allied services and running the production units to meet some of the inputs like coaches, locos & wheels.

Market Segmentation and Positioning

Market segmentation helps the business organizations to divide large heterogeneous markets into smaller segments that can be served efficiently and effectively by services that match their unique needs (Kotler and Armstrong 2001). The Railways have segmented their market into two portions. These are called the Passenger Transportation segment and Freight Transportation segment. In the Passenger segment, the Railways have positioned themselves as carriers of suburban traffic at low cost and as transporters of passengers over long leads. In the Freight segment, the Railways have positioned themselves as carriers of large quantities of bulk commodities over, relatively, long leads of more than 300 kilometers.

i) **Passenger Transportation**

Indian Railways operate, around 8520 passenger trains and transport 13 million passengers daily. The passenger services can be segmented into two parts. The second-class and unreserved travel form the value segment while all other classes form the premium segment. The share of the Railways in the passenger transport market is about 20 percent (The Indian Railways Report 2001).

The revenue share of the premium segment has been, steadily, increasing, though it still forms only about 19 per cent of the IR's passenger revenue.

The passengers on the Railways come, mainly, from four different categories, namely:

- Rural passengers
- Urban commuters
- Inter-city business travellers.
- Long distance passengers

The travel needs of various classes of travellers are different. The Railways have to, therefore, look after the needs of each category while planning for the total transport requirements of their passengers.

ii) **Freight Transportation**

Indian Railways carried 518.74 million tonnes of originating traffic in the year 2002-03 i.e. about 1.042 million tonnes everyday. Freight transportation forms a major part of the Railways' business and accounts for about 68 percent of its revenue. The Railways meet, approximately, 40 percent of the nation's transportation needs. However, this share has been falling, continuously, over the past 50 years.

The freight business of the Railways can be classified into two categories.

- Bulk commodities
- Other cargo

The bulk commodities consist of coal, iron and steel, cement, fertilizers, foodgrains, petroleum products and other commodities like iron ore, limestone and gypsum. The share of the bulk commodities in the Railways' business has been increasing in the recent times. At present, these commodities contribute about 95 percent of the freight revenue. Coal, alone, accounts for almost half of the bulk traffic carried. The share of the bulk commodities in the Railways has increased in the recent years as the Railways have concentrated on trainloads rather than wagonloads. A sizable share of the bulk commodities is shipped by the public sector undertakings. The freight customer is, usually, an industry or an enterprise who wants a reliable and cost effective transport of the goods from their originating points to the destinations. In the recent past, due to the liberalization of the economy, the freight customers have become much more demanding in terms of cost as well as quality of service. This has necessitated a fresh look by the Indian Railways at the service being provided by them.

iii) Production Units and other Allied Services

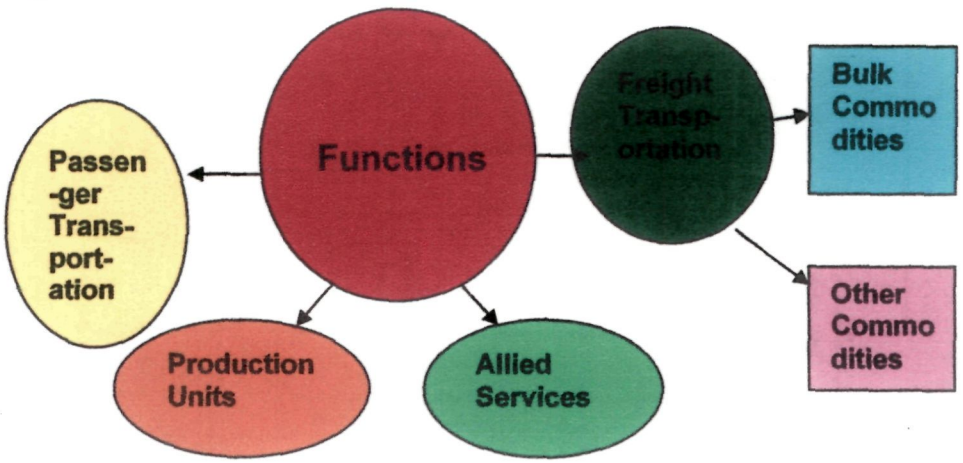
The Railways have a number of production units where they manufacture coaches, locomotives, wheels/axles and diesel loco components. These are:-

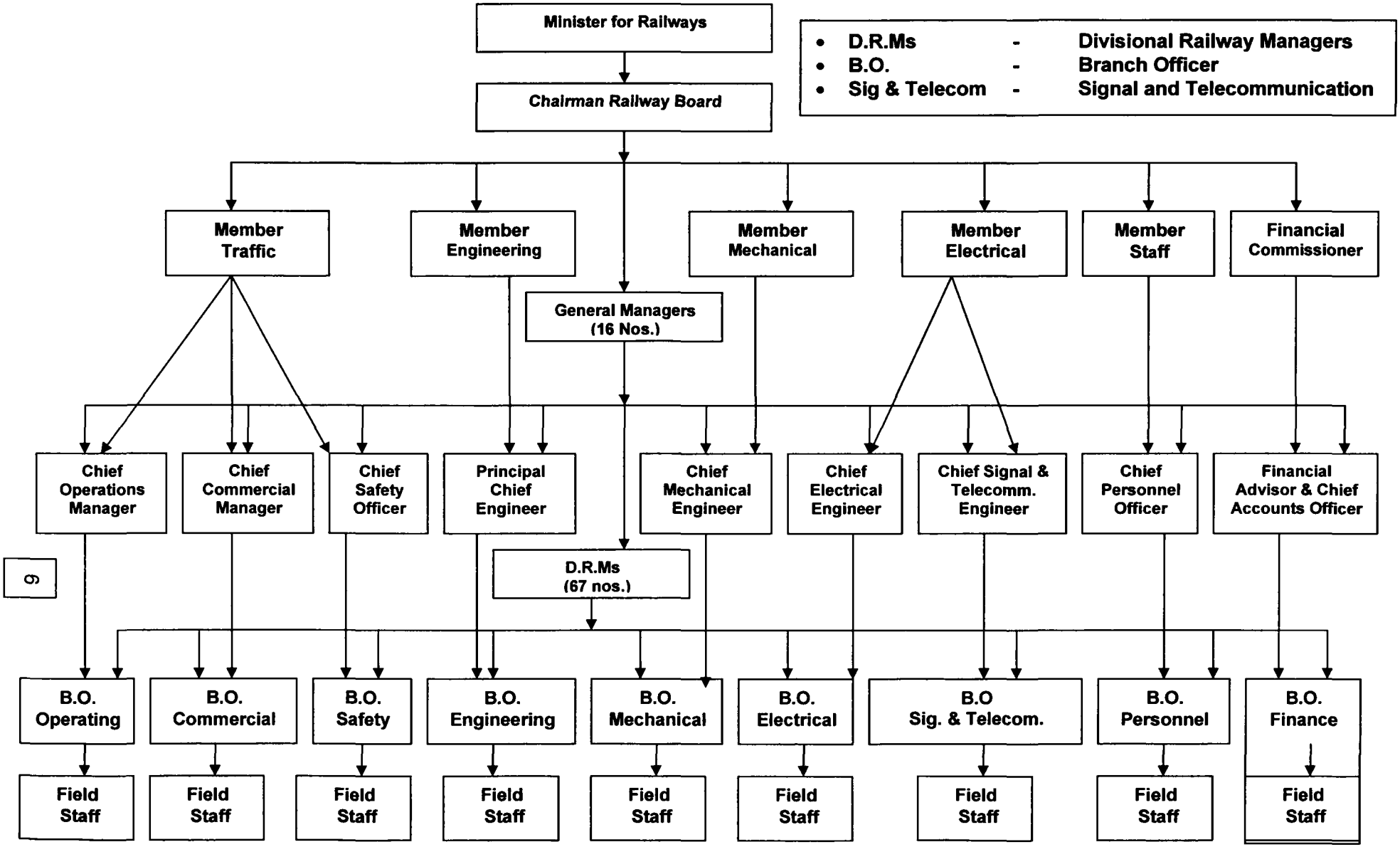
1. Diesel Locomotive Works – Varanasi (UP)
2. Chittaranjan Locomotives Works – Chittaranjan (West Bengal) (for electric locomotives.)
3. Integral Coach Factory, Perambur (Tamil Nadu)
4. Rail Coach Factory, Kapurthala (Punjab)
5. Wheel and Axle Plant, Bangalore (Karnataka)
6. Diesel Components Works, Patiala (Punjab)

The allied services also include other non-core businesses like provision of schools, hospitals, housing, printing presses, technical institutes and hotels. Most of these businesses were started out of compulsions rather than as a conscious effort to diversify the activities of the Railways.

A model depicting the broad functions of the Railways is given in Fig 1.1.

Fig 1.1





ORGANISATION CHART OF INDIAN RAILWAYS

Organisational Structure of Indian Railways

The Railways are a part of the Central Government as a Ministry The Ministry of Railways is headed by the Minister of Railways who is assisted by the members of the Railway Board for making policy decisions as well as for the day-to-day operation of the Railways An organisation chart of the Indian Railways is available at page 6

The Railway Board consists of seven members, from the different cadres of the Railways, with the Chairman, Railway Board as its head The organisation of the Indian Railways is structured on the basis of different functions Each major function is performed by a cadre of officers and staff who are trained with the necessary skills for performing their functions

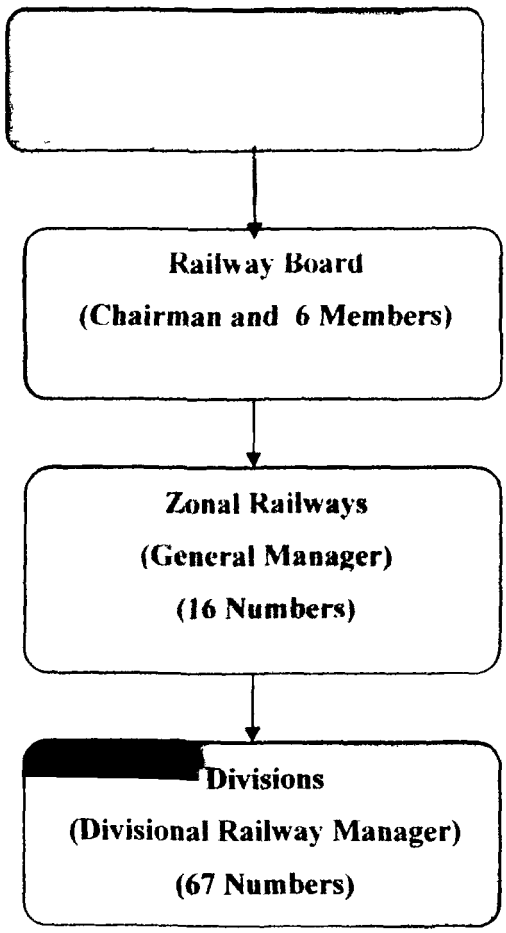
The regional organization of the Railways has been divided into sixteen zones Each of these zones is headed by a General Manager who is the overall incharge of all the departments and is responsible for the administration of the zone, and for coordination with the other zones and the Railway Board From the Ist of April 2003, five new Railway zones have been formed with a view to increase the overall efficiency of administration and to have a better control over the Divisions

Each zonal railway is divided into a number of Divisions Each Division is headed by a Divisional Railway Manager who controls all the departments within the jurisdiction of the Division A Division is a field unit and controls the activities of all the stations situated within its boundaries

It can be seen, from the above details, that the Railways has a matrix type organization as each branch officer of a department on a Division has to report, at the same time, to the divisional manager as well as to his departmental head in the concerned zone The departmental heads are the experts in their respective fields while the Divisional Railway Manager is the overall incharge of the administration of the Division

A sketch of the general organisation of the Indian Railways is shown in Fig 1.2.

Fig 1.2



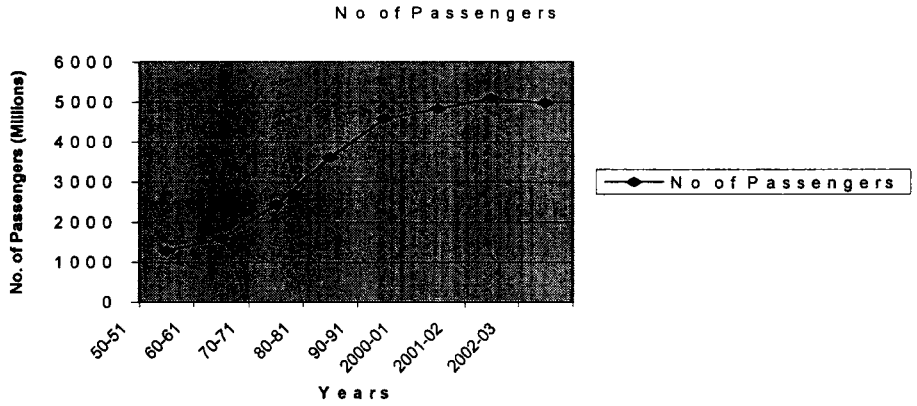
1.2 Organisational Performance

Passenger Traffic

In 1950-51, Indian Railways carried 1284 million passengers, which generated 66.5 billion passenger kilometers (The Indian Railways Year Book 2002-03). This traffic has, continuously, grown from this level to 4468 million originating passengers and 4046 billion passenger kilometers in 1998-99. In the year 2002-2003, the Railways carried 4971 million passengers.

The growth of passenger traffic is shown in Fig. 1.3.

Fig 1.3



Source: Indian Railways Year Book 2002-03

The above trend (Fig.1.3) shows that :

i) There has been a steady growth of the passenger traffic on the Railways over the years.

ii) Since 1950-51, originating passengers have increased by 287%.

The suburban passengers on the Indian Railways, however, have increased at a higher rate than the non-suburban passengers as shown in Table 1.2.

Table 1.2 : Proportion to Total Traffic – No. of Passengers (Percentage)

	1950-51	**1960-61**	**1970-71**	**1980-81**	**1990-91**	**2000-01**	**2001-02**	**2002-03**
Non-Suburban:								
Ordinary Second Class	62 0	50 38	42 82	37 14	31 70	30 20	**30.58**	**29.81**
Mail/Express	4 0	6 02	6 38	7 20	9 26	9 77*	**9.73***	**10.32**
Upper Class	2 0	0 94	0 66	0 30	0 49	0 83	**0.80**	**0.85**
Total	68 0	57 34	49 86	44 64	41 45	40 80	**41.11**	**40.98**
Suburban (all classes	32 0	42 66	50 14	55 36	58 55	59 20	**58.89**	**59.02**
Grand Total	100 00	100 00	100 00	100 00	100 00	100 00	**100.00**	**100.00**

*Also includes Sleeper Class. **Source : Indian Railways' Year Book 2002-03**

The above Table shows that suburban as well as Mail/Express traffic has grown at a higher rate since 1950-51 than the overall average. The varying growth rates of the different passenger segments have resulted in corresponding changes in the composition of passenger services and the number of trains run in each category.

Table 1.3 Earnings Per Passenger Kilometer (In Paise)

Segment	2000-01	2001-02	2002-03
Non Suburban			
Upper Class	87.22	86.33	93.86
Second Class Mail/ Express	24.69	23.98	25.98
Second Class ordinary	13.42	13.83	14.03
Average (All Classes)	25.51	25.14	26.62
Suburban			
All Classes	12.28	12.45	13.64
Overall Average	22.94	22.62	24.35

Source : Indian Railways Year Book 2002-03

The earnings per passenger kilometer, on the IR, have increased in the year 2002-03 as compared to the year 2001-02. This is shown in Table 1.3.

Railways have provided computerized reservation facility for its passengers. From 702 locations in 2001-02, this facility was available at 880 locations in 2002-03. It is now possible for the passengers to book outward/return journey tickets from/to any station at any of the computerized reservation centres.

An analysis of the profitability of coaching services for the year 2002-03 shows an overall loss of Rs.5609.15 crores. Out of these losses, the net suburban losses in Chennai, Kolkata and Mumbai, provided with EMU and non-EMU services, contributed Rs.649.70 crores (Year Book 2002-03). The passenger fares on the Railways have not risen proportionately to the rise in inflation in the economy of the country. The low second-class ordinary and short distance passenger fares along with non-suburban season ticket holders for distances upto 150 Kilometers and suburban monthly/quarterly season ticket

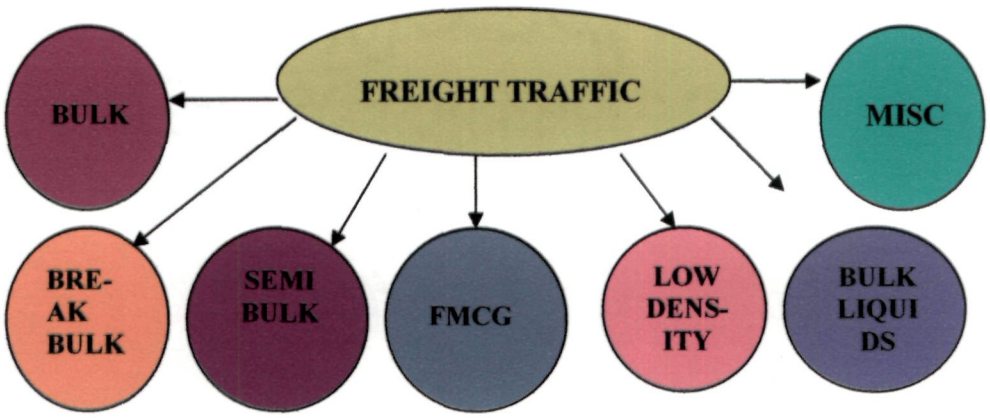
holders, have contributed to the losses of the Railways, in the passenger segment, in a big way.

The Railways also offer concessions to a large number of categories in society such as handicapped persons, patients suffering from cancer, tuberculosis and other serious diseases, war widows, senior citizens etc. The net social service obligation borne by IR in 2002-03 has been assessed at Rs.3787 crores, constituting about approximately 9.33% of the total revenue earnings of Rs. 41897.20 crores (Year Book 2002-03). Passenger Services constitute nearly sixty percent of the Railways transport output. These services, however, contribute only 32% to the total revenue.

Freight Business

There are seven representative groups of commodities under freight traffic. These groups are shown in Figure 1.4.:

Figure 1.4



1. Bulk
2. Break Bulk
3. Semi Bulk
4. Fast Moving Consumer Goods (FMCG)
5. Low Density
6. Bulk Liquids
7. Miscellaneous

Railways have an advantage over other modes of transport for moving bulk, bulk liquids and break bulk commodities if these have to move to distances beyond 250 to 300 KMs.

At present 97% of Indian Railways' freight traffic comprises of bulk and break bulk commodities. The bulk traffic segment consists of eight major commodities. These are :

1. Coal
2. Raw Material for Steel Plants
3. Iron and Steel
4. Cement
5. Petroleum Products (POL)
6. Foodgrains
7. Fertilizers
8. Iron Ore for export

At present, these eight major commodities constitute about 89% of the total traffic (Corporate Plan Year 2000-12).

Table 1.4 shows the trend of growth in Revenue Earning freight traffic over the years :

Table 1.4 Revenue Earning Freight Traffic

Year	Tonnes (Millions)	Index	Net tonne Kms (Millions)
1950-51	73.2	100.0	37,565
1960-61	119.8	163.7	72,333
1970-71	167.9	229.4	110,696
1980-81	195.9	267.6	147,652
1990-91	318.40	435.0	235,785
2000-01	473.50	646.9	312,371
2001-02	492.50	672.8	333,228
2002-03	518.74	708.7	353,194

Source : Indian Railways Year Book 2002-03

The movement of bulk commodities for the year 2002-03 is shown in Table 1.5.

Table 1.5 Movement of Bulk Commodities (Revenue Traffic)

Sl.No.	Commodity Group	Million Tonnes	Percentage
1	Coal	235.85	45.47
2	Foodgrains	45.60	8.79
3	Iron and Steel	16.06	3.10
4.	Iron ore	70.83	13.65
5	Cement	46.25	8.92
6	POL (Mineral Oils)	34.05	6.56
7	Fertilizers	26.46	5.10
8	Lime stone	9.09	1.75
9	Stones	6.07	1.17
10	Salt	3.18	0.61
11	Sugar	2.32	0.45
12	Other Goods	22.98	4.43
	Grand Total	518.74	100.00

Source : Indian Railways Year Book 2002-03

As seen from the above details, Indian Railways have become bulk freight carriers and are now the main provider of transport for the eight commodities listed in the paragraph above. However, about thirty years ago, more than 30 percent of the freight carried by IR consisted of commodities other than these eight. "Other Commodities" were more profitable as these formed 32 percent of the traffic volume, which generated 39 percent of freight revenue. Table 1.6 shows these percentages.

Table 1.6 Distribution of Freight Traffic (NTKM) by Commodities (1969-1999)

(Percent)

Commodity	1968-69	1978-79	1983-84	1988-89	1993-94	1998-99
Coal	28.64	26.56	32.41	38.38	41.2	45.66
Steel	6.32	6.87	5.62	5.38	5.1	4.24
Iron ore for export	4.39	5.20	3.11	3.63	2.4	2.55
Cement	3.70	5.23	6.24	7.84	7.8	7.33
Food Grain	10.54	12.92	17.8	15.51	14.0	11.92
Fertilizer	3.16	5.61	5.72	7.54.	6.7	8.16
POL	4.67	7.68	6.34	6.56	6.5	7.63
Other commodities	32.54	24.87	20.51	12.10	10.8	12.47

Source : Computed from data in Indian Railways Year Book – various years

Table 1.7 Distribution of Freight Revenue by Commodities (1969-1999)

(Percent)

	1968-69	1978-79	1983-84	1988-89	1993-94	1998-99
Coal	19.81	21.82	29.30	37.81	42.48	48.41
Steel	8.83	9.68	9.34	9.05	8.21	6.23
Iron ore for export	3.99	4.91	2.71	2.76	2.23	2.40
Cement	4.12	5.47	7.05	8.20	8.53	7.93
Foodgrains	7.21	7.62	9.73	8.84	7.92	6.82
Fertilizer	2.64	4.95	4.49	6.30	4.68	4.67
POL	7.76	11.61	12.37	12.71	11.89	13.79
Other Commodities	38.67	28.92	21.00	12.32	9.85	9.48

Source : Computed from data in Indian Railways Year Book – Various Years

As seen from the above details, Indian Railways have moved, continuously, towards bulk commodities. A notable feature of the changing pattern of traffic is the drop in the share of "other commodities" from about 40 percent at the end of 1960's to less than 15 percent by the end of 1990's.

Table 1.8 shows the growth rate of freight traffic (commodity wise).

Table 1.8 Growth Rate of Freight Traffic by Commodities

(percent per year)

Category	**Trend* 1984- 1999**	**Last Five Years 1994-1999**
Coal	5.51	2.91
Steel	1.51	-2.03
Iron ore for export	-1.96	1.81
Cement	4.43	1.92
Foodgrains	0.19	3.68
Fertilizer	2.90	3.02
POL	4.75	2.23
Other Commodities	-1.44	2.63

*Trend line fitted in a log-linear model.

Source : Computed from data in Indian Railways

While coal has shown a high growth rate of about 5.5 percent per year, its average growth rate of only 2.9 percent from 1994-99 has shown a significant deceleration. Other bulk commodities like Cement and POL have also shown a downward growth rate during this period. "Other Commodities" have shown a negative growth trend of 1.4 percent but these have slightly picked up during the period 1994-99, to an average annual growth rate of about 2.6 percent.

The Ministry of Railways have attributed this loss of market share to competitive weakness of the railway system as compared to other modes of

transport like roads, pipelines, coastal shipping etc. At the same time, the Railways have an inherent advantage over the roadways because they are low cost carriers of large volumes of goods moving in trainloads over long distances. (Status Paper 2002).

The inherent advantage stated above has a number of limitations too. The large volumes of freight traffic moving in trainloads must move over long distances only. A trainload, in the railway terminology, consists of about 2300 metric tonnes moved in covered wagons or 3500 metric tonnes of these non-damageable commodities, which are moved in open wagons having the nomenclature of 'BOXN'.

Growth rate for steel was –2.03 per cent per year in the period 1994-99 while the same for cement was only 1.92 per cent during this period. The trend of growth of cement traffic, for the period 1984-99, was 4.43 percent. This shows that growth rate of cement traffic has also slowed down in the recent past.

Keeping the pattern of demand of various customers in view, fulfilling the above two conditions is difficult for a majority of them. This is, particularly, so for those customers transporting damageable goods like fertilizers, cement, food grains and consumer goods. In the recent past, even those customers who were in a position to offer large volumes over long distances are finding it difficult to move their traffic due to various operational constraints of the Railways. These constraints include inadequate line capacity on the busy 'Golden Quadrilateral' routes, which connect the four Metro cities (viz. New Delhi, Bombay, Chennai & Kolkata) and their diagonals, and the capacity of handling the goods at the terminals. (Status Paper 2002)

The Railways have some inherent disadvantages also for such customers as are not in a position to offer their goods in large volumes to be moved over long leads. The share of the Railways, has, therefore, been showing a downward trend over the last few years.

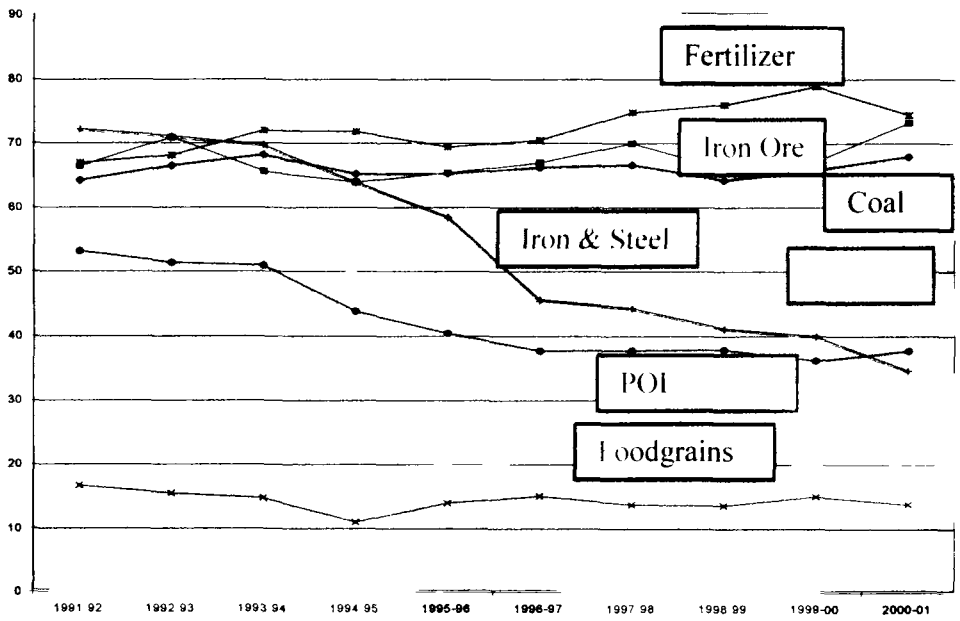
This is evident from the figures given in Table 1.9.

Table 1.9 Percentage of Traffic Transported by Railways

Year	Coal	Iron Ore	Cement	Food grains	Fertilizers	POL	Iron & Steel
1991	63.9	66.1	57.0	16.4	66.6	52.9	71.9
1992-93	66.2	70.6	56.2	15.2	67.8	51.1	70.81
1993-94	67.9	65.3	56.1	14.5	71.7	50.7	69.38
1994-95	64.98	63.66	49.52	10.79	71.56	43.57	63.71
1995-96	64.97	65.15	47.45	13.76	69.15	40.16	58.30
1996-97	65.95	66.68	46.42	14.85	70.23	37.47	45.38
1997-98	66.37	69.72	44.93	13.51	74.58	37.52	44.04
1998-99	63.99	65.63	41.80	13.38	75.77	37.66	40.90
1999-00	65.67	66.97	43.42	14.78	78.60	35.96	39.70
2000-01	67.67	72.93	43.10	13.57	74.17	37.49	34.44

Source : Status Paper on Indian Railways, May 2002

Fig 1.5



The share of the Railways in the transportation of various commodities over the period from 1991-92 to 2000-01 is shown in Fig 1.5.

The Railways' share in the POL (Petroleum, Oils, Lubricants) sector has come down from 52.9% of the total POL products transported in the country in the year 1991-92 to 37.49% of the same in the year 2000-01 In Iron & Steel, there is a continuous drop from 71.9% in the year 1991-92 to 34.44% in the year 2000-01 while in the case of cement, the share has come down from 57% to 43.10 percent during the same period. (Status Paper 2002).

The figures given by the cement industry, however, show a steeper decline in the Railways' share of cement transportation (Kamal Kishore 2002) as shown in Fig 1.6 and Table 1.10.

Fig 1.6

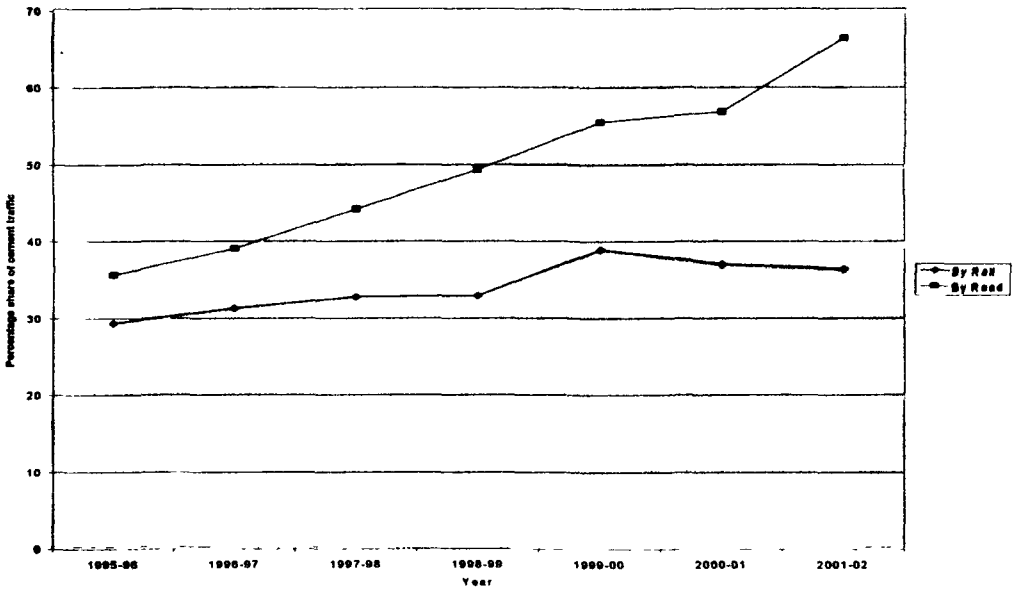


Table 1.10 Despatches of Cement by Rail and Road (Incl Sea) 1995-96 – 2001-2002 (Million tonnes)

Year	Total Dispatches	By Rail	By Road	%age of Rail to Total Dispatch
1995-96	64.49	29.12	35.37	45
1996-97	69.89	31.08	38.81	44
1997-98	76.57	32.58	43.99	43
1998-99	81.83	32.72	49.11	40
1999-00	94.00	38.71	55.29	41
2000-01	93.44	36.80	56.64	39
2001-02*	102.37	36.20	66.17**	35

Source : Cement Industry and Indian Railways (Vision 2025)

*Provisional **including sea(2.07)

The Railways' share, according to these figures, was only 39% in 2000-01. It came down further in 2001-02 to only 35% of the total dispatches by railways, roads and waterways. (Kamal Kishore).

There are a number of reasons for the decline in share of the Indian Railways in cement transportation. Some of the reasons are uncontrollable because the Railways are not able to do much to control factors like changes in the external environment. These include social, political and economic changes that have taken place in the country in the last few years, particularly, after the liberalisation of the Indian economy since the year 1990.

There are other factors, which are controllable. The Railways have made efforts to control these factors. However, these efforts, in the present system of working, have not met with much success and, the freight traffic, particularly, the cement, continues to get diverted to other modes of transport.

1.3 Financial Performance

For the past few years, Indian Railways have been passing through a financial crisis. The Operating Ratio, which is the ratio of the total expenditure to total revenues, has been going up. This ratio was at the level of 82.5% in the year 1995-96 but has, gradually, come up to 98.3% in 2000-01. The Revised Estimates for the year 2003-04 projected this ratio at 92.6% while the Budget Estimates for the year 2004-05 are 93.0%. (Explanatory Memorandum 2002)

In the year 2002-03, out of the gross traffic receipts of Rs.41538 crores, a sum of Rs.39128 crores was spent towards the working expenses, leaving net revenue of Rs. 2140.04 crores. (Explanatory Memorandum 2002). If the payment of the dividend to the general revenues as committed by the Railways, was met out of this surplus, the net amount left with the Railways, would be of the order of Rs.1020.16 crores only. (Explanatory Memorandum 2002).

The ratio of net revenue to capital-at-charge plus investment from the Capital Fund was only 2.5% in the year 2000-01. The budget estimates for the year 2002-03 projected this ratio as 7.3%. This shows that, in the past two years, some initiatives have been taken by the Railways to improve their financial position.

Yearwise details of the Operating Ratio and ratio of Net Revenue to Capital-at-Charge are given in Table 1.11 (Status Paper 2002). The operating ratio over the years has been shown in Fig 1.7 below.

Fig 1.7

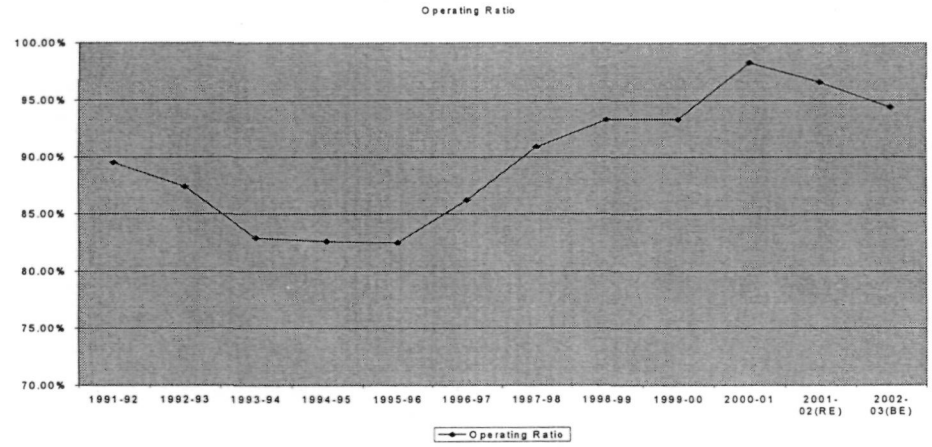


Table 1.11 Operating Ratio and Ratio of Net-Revenue to Capital-at-Charge.

Year	Operating Ratio	Ratio of Net Revenue to Capital-at-Charge and investment from Capital Fund
1991-92	89.5%	8.7%
1992-93	87.4%	9.7%
1993-94	82.9%	13.7%
1994-95	82.6%	15.3%
1995-96	82.5%	14.9%
1996-97	86.2%	11.7%
1997-98	90.9%	8.9%
1998-99	93.3%	5.8%
1999-00	93.3%	6.9%
2000-01	98.3%	2.5%
2001-02(RE)	96.6%	4.5%
2002-03(BE)	94.4%	7.3%

Source : Status Paper on Indian Railways 2002.

RE = Revised Estimates BE = Budget Estimates

Servicing of Debts

In addition to paying dividend to the General Revenues, the Railways, have to service their debts. The Railways' debts consist of borrowings from the Indian Railway Finance Corporation, the lease charges on "Own Your Wagons" scheme and the "Build, Own, Lease and Transfer" (BOLT) scheme.

Investment from the Capital Fund, which is the borrowed capital from the Indian Railways Finance Corporation, has also been going up. This investment has gone up to Rs.10390 crores in the year 2002-03. (Explanatory Memorandum 2002-03).

For the Indian Railways, the budgetary support from the General Revenues has been coming down, sharply, over the past twenty years. From a level of 75% of the outlay of Railway Budget in 1978-80,it came down to 23% in the VIII Plan. It went up slightly to 34% in the IX Plan (1997-2002) (Status Paper 2002). Table 1.12 shows the trend from the First Plan onwards.

Table 1.12 Budgetary Support to the Indian Railways

Plan/ Period	Outlay (Rs.Cr)	Internal Gener-ation (Rs.Cr.)	% of Plan Size	Market Borrow-ing (Rs.Cr)	% of Plan Size	Budget-ary Support (Rs.Cr)	% of Plan Size
I	422	280	66	-	-	142	34
II	1043	467	45	-	-	576	55
III	1685	545	32	-	-	1140	68
1966-69	762	320	42	-	-	442	58
IV	1428	397	28	-	-	1031	72
IV	1525	384	25	0	0	1141	75
1978-80	1251	316	25	0	0	935	75
VI	6585	2783	42	0	0	3802	58
VII	16549	7089	43	2520	15	6940	42
VIII	32306	18832	58	6161	19	7313	23
IX	45725	16311*	35	14003	31	15411#	34
Xth Plan 2002-03	11,408	3277*	29	2517	22	5614#	49
2003-04 (RE)	13,918	3974*	29	3000	21	6944#	50

*Includes Safety Surcharge and Railway Safety Fund #Includes contribution to Special Railway Safety Fund
Source : Indian Railways, April 2004 issue, p/25

The above table also shows that the internal generation of resources has come down from 58% (Rs.18832 crores) in VIII Plan to only 35% (Rs.16311 crores) in the IX Plan. While the market borrowing of the Railways has gone up from 19% (Rs.6161 crores) to 31% (Rs.14003 crores) during the above period, the total Plan outlay for the IX plan also increased to Rs.45725 crores. The Railways, being a national undertaking, are expected not only to meet their expenses and generate sufficient funds for their development, but also they have to meet their social obligations, which are not compensated by the general exchequer.

The Social Burden

In the year 2002-03, the Railways estimated the net social burden to be of the order of Rs.3787 crores (Explanatory Memorandum – 2003-04). The break up of this social burden is classified into the following four categories: -

- Unremunerative passenger and coaching services.
- Operation of uneconomic branch lines.
- Transportation of essential commodities carried below cost.
- New lines having a negative rate of return but constructed for social development of an area.

The Railways have been performing the dual role of being a commercial enterprise and a vehicle of socio-economic development for a long time. However, the present financial health of the system has forced them to review their role by expecting the central government to compensate them for the social burden.

Freight earnings constitute about 70% of the gross traffic receipts. There is an element of cross subsidy from freight traffic to passenger traffic. The freight traffic also compensates for the losses of uneconomic branch lines and new lines that are opened for traffic. The loss on coaching services in the year 2002-03 was of the order of Rs. 5609.15 crores (Explanatory Memorandum 2003-04). In fact, there is a cross subsidisation within the freight traffic commodities like edible salt, food and vegetables, livestock, sugarcane, bamboos, coir products, bricks, tiles, bones etc. which do not pay for the cost of haulage and are carried by the Railways below cost. The total losses on this account in the year 2002-03 were Rs. 328.17 crores. (Explanatory Memorandum 2003-04).

1.4 Existing Marketing Strategies of the Indian Railways

The liberalisation of the economy, in the 1990's, necessitated a fresh look by the Railways at their marketing strategies as the privatisation process has given rise to forces of competition. This, however, does not mean that the Railways have not been using any marketing strategies in the past.

There is no doubt that, in passenger services, even today, the railways are the most popular mode of transport for movement over long distances of 300 Kilometers and more. They are faster, safer and more comfortable for the passengers as compared to the roadways. Even for short distances, the railways are the cheapest mode of transport for suburban passengers who have been given the facility of monthly and quarterly season tickets that are much cheaper as compared to the cost of travel by road.

The marketing for services includes the following variables for communicating with and satisfying the customers.

1. Product
2. Price
3. Promotion
4. Place
5. People
6. Physical Evidence
7. Process

The Railways has been using these variables for providing service to its customers.

Market Segmentation in Passenger Services

The passenger product has been segmented into various classes viz. Second, Sleeper, Air-Conditioned Three Tier Sleeper, Air-Conditioned Sleeper and First Air-Conditioned. The passengers, travelling in various classes on the same train, have to pay different fares depending on the facilities provided on board.

The trains have also been classified into Passenger, Mail/Express, Superfast, Jan-Shatabdi, Shatabdi and Rajdhani trains, based on the travel time taken from the originating station to the destination station, the catering and other on board services.

Market Segmentation in Freight Services

In the freight services, the Railways have designed different types of wagons for carrying different commodities. BOX, BOBR, BOBS and BOBY types of open wagons are available for carrying minerals like coal, limestone, dolomite, iron ore, pig iron and stone etc. which are non-damageable by wet. For damageable commodities like food grains, fertilizers, cement and sugar etc. covered wagons of the BCN/BCX type have been provided.

Bogie tank wagons, specially designed to carry mineral oils, have been made available to the Oil Companies for transporting petroleum products.

Another special type of tank wagon has been provided for transporting Liquefied Petroleum Gas that is used as domestic fuel all over the country.

The Railways have also designed BLCA type flat wagons for carrying containers for the Container Corporation of India, which is a subsidiary of the Indian Railways.

Pricing

On the pricing front, the Railways have used a number of pricing strategies for transporting passengers and freight. In order to keep the passenger fares low, Railways have been cross subsidising their passenger services from the freight revenues. This marketing strategy has, over a period of time, affected the growth of freight traffic on the Railways. A number of customers of cement, fertilizers and other consumer goods have switched over to roadways due to high price of rail transport.

In the sphere of freight services, the Railways have divided the commodities into a number of classes. Goods, in different classes, are charged different freight rates over the same distance of travel. In the Railway Budget for the year 2002-03, the total number of classes was reduced from 59 to 32 with class 90 as the lowest class and class 300 as the highest class, thereby reducing the ratio between the highest and the lowest freight rate from 8.0 to 3.3. In the year 2003-04, the band of freight rates has been reduced further by lowering the highest class from class 300 to class 250 and the total number of classes have been reduced from 32 to 27. The ratio of freight between the highest and the lowest class has now been further reduced from 3.3 to 2.8 (The Railway Budget 2003-04).

To meet the competition, the freight rates for petrol have been reduced by 10.7 percent by lowering its classification to class 250. The freight rates of other petroleum products have been reduced by two stages, lowering their freight rates by 5.3 percent to 9.5 percent. The freight rates of cement, clinker, manganese ore, and caustic soda liquid (in tank wagons) have been reduced by one stage i.e. by 3.7 percent.

As a marketing strategy to increase their share in the movement of petroleum products further, the Railway Minister has announced that the Railways are ready to consider long-term agreements within individual oil companies for further reduction in freight rates on a sector-to-sector basis if guaranteed volumes of additional traffic are committed for rail movement.

For capturing short lead traffic, the Railways, in the Railway Budget 1990-2000, had granted a 25% freight concession for traffic booked for distances up to 50 Kms. Further, in the Budget 2003-2004, a scheme of graded concessions has been announced. This scheme allows 50 percent concession for traffic booked up to 50 Kms, 25 percent concession for traffic booked from 51 Kms to 75 Kms, and 10 percent concession from 79 Kms to 90 Kms.

The 'to-pay' surcharge on coal has been reduced from 15 percent to 10 percent and from 10 percent to 5 percent on other commodities (The Railway Budget 2003-04).

Two-point block rakes were earlier granted the benefit of lower trainload rates only up to the common point of movement. The Railways have now (The Railway Budget 2003-04) decided to grant the benefit of trainload rate for the entire distance of transportation.

Clubbing of consignments has been made more liberal, permitting up to 12 persons to club their consignments in an 8-wheeler wagon. Earlier, only up to 6 persons were permitted to do so.

Wages of Railway staff deployed in sidings, charged to the siding owners, are being reduced by Railways in a phased manner by reviewing the number of staff whose cost is charged to the siding owners.

A rebate of 2 percent for every 5 crores rupees of net additional originating freight earnings from commodities placed in class 135 and above, over the previous financial year, generated to the Railways will be granted from the year 2003-04 to the Premier Customers of Railways and those private siding owners

who are giving originating freight revenue of Rs. 25 crores and more per annum from their sidings. (Railway Budget 2003-04).

Promotion

Indian Railways have been working as a national carrier. There is no doubt that rail travel is safer than road travel. The Railways have a very wide reach and have their presence even in the remotest parts of the country. The passenger reservation system of the Railways is computerised and can be accessed even from far off places like Port Blair in Andaman Islands that do not have any rail or road access. An interested passenger can have his seat reserved in any train from any station to any station from this system.

As far as the movement of freight traffic is concerned, the Railways have, gradually, become a carrier of bulk traffic. The piecemeal traffic, or the traffic offering in less than wagons loads has moved away from the Railways due to their inability to provide reliability to this sensitive traffic.

In passenger travel, the Railways have attracted the passengers by providing well-designed coaches, more comfortable seats and better catering services on board. Provision of modern modular vending stalls, STD phone booths, bookstalls and other passenger amenities at the stations are symbols of the physical evidence of the passenger transportation provided by the Railways. The presence of the railway frontline staff, in uniform, also signifies the physical evidence of the environment in which a passenger finds himself when he wants to travel by rail. The Railways spend about 16 crores rupees on promotion every year.

People

The Railways have realised the importance of training their front line staff. They have established a Customer Care Institute at Delhi where the staff is trained in courteous behaviour towards the rail users.

Process

The process of delivery of the transport product is an area where the Railways have provided the necessary infrastructure for dealing with its customers, both passenger and freight. However, there are a number of areas, in the delivery process, where improvements are required to provide better satisfaction to the customers.

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CHAPTER-II

EXISTING MARKETING STRATEGIES OF THE INDIAN RAILWAYS: LITERATURE REVIEW

2.1 Changing Scenario of the Railways' Share in Freight Transportation.

The year 2002 was celebrated on the Indian Railways to mark 150 years of their service to the nation. Railway transportation has been a subject of study in India for a long time. However, the need for an in-depth study arose with the liberalisation of the economy in the 1990's when the controls and licenses of the government, on the various aspects of production and distribution of goods, started getting reduced.

Since the 1980s', Indian Railways had been following a policy of transporting commodities in 'Train Loads' rather than in ' Wagon Loads'. A trainload, normally, consists of about 2300 tonnes to 3500 tonnes of payload, depending upon the type, of commodity. A railway wagon, having eight wheels, can carry about 58 tonnes of material while each of the four-wheeler wagons, which have now been, almost, phased out, can carry only 22 tonnes of the same. The minimum quantity for transportation in the railways wagons, therefore, has increased from 22 tonnes to 58 tonnes over a period of time.

The Indian Railways adopted the policy of movement in Train Loads because of operational constraints and excessive movement problems of piecemeal freight wagons through a series of railway yards. After a detailed analysis of the situation in 1980s it was decided, , that the Railways are not a suitable mode of transport for piecemeal or wagon load movement of traffic. The Railways, therefore, repositioned themselves as carriers of bulk traffic over long leads in 'Train Loads'. The policy of movement in 'Train Loads' has been a success on the Indian Railways despite the fact that the customers, who required freight movement in 'Wagon Loads' only, have shifted to the roadways as the mode of transport.

In the present circumstances, it is difficult for the Railways to change this policy. There are no signs of any change as seen from the successive budget

speeches of the Ministers for Railways. The Railways are, in fact, expecting the Container Corporation of India to load the piecemeal traffic, in containers of 40 feet or 20 feet length each, and move those by rail, after aggregating the containers into 'Train Loads' for various directions. The Container Corporation of India has a network of road cum rail facilities. They are offering container services to the customers who are interested in movement of freight traffic in smaller quantities.

Thus, for ordinary customers, due to the enforcement of the 'Train Load' concept by the Railways, the minimum quantity accepted, for movement, increased from a level of 22 tonnes to about 2200 tonnes – an increase of about hundred times. As a result, the small customers, who had only a few tonnes of material to be offered for transportation, had no choice but to shift to other modes, mainly, roadways, for transporting their goods. Poor development of roads in India, in the eighties and nineties, was a factor, which acted in favour of railway transportation, as, the customers, desirable of transportation of goods over longer leads, had few other options.

The opening up of the economy to the private sector, and their participation in building of roads, national highways & bridges, resulted in an accelerated development of road-ways in India .The Railways' customers, particularly, those requiring transportation of small quantities over short and medium distances, upto 500 kilometres, found roadways as a quicker and more viable alternative.

With the improvement in the highways, some of the bigger customers of the Railways also found that the movement of freight traffic by roadways is cheaper. They started shifting the transportation of their goods from railways to roadways. The delay in the availability of wagons and the route capacity constraints of the Railways accentuated the problem and forced the customers to shift to other modes of transport.

It was, at this stage, that the Indian Railways got concerned over their falling share in the freight transportation and over losing the same, year after year, mainly, to the roadways.

Table 2.1 gives the changing picture of the Railways' share in Freight Transportation.

Table-2.1 Trends in Road and Rail Share

YEAR	ROAD		RAIL	
	Billion Tonne Kms	Percentage share	Billion tonne Kms.	Percentage share
1951	12.1	21.5	44.1	78.5
1961	29.8	25.4	87.7	74.6
1971	80.7	38.8	127.4	61.2
1981	161.2	50.4	158.5	49.6
1985	243.5	58.5	172.6	41.5

(Source: Asian Productivity Organisation 1995).

The Table shows that the share of the Indian Railways has come down from 78.5% in 1951 to 41.5% in 1985. The main reason for the Railways losing their share of traffic to other modes of transport, particularly, to the roadways, is the policy decision taken by the railways to move only bulk traffic in 'Train Loads', thereby, discouraging the movement of small and piecemeal traffic by rail. The falling share, however, still remains a serious concern with the railways because of reasons other than the adherence to the above policy.

Though the Railways have been increasing their quantum of freight transportation in absolute terms, the originating tonnage of the IR (Indian Railways) has grown at a rate which is slower than the growth of the economy as shown in Table 2.2: -

Table 2.2 Annual Average Growth Rate in GDP and Originating Tonnage of IR

Plan Period	GDP %	Originating tonnage on IR %
Sixth Plan	5.0	4.1
Seventh Plan	5.8	4.0
Eighth Plan	5.6	2.9

(Source: - RITES Report 1997)

2.2 Studies in Freight Transportation and Marketing Strategies

Due to their concern with the falling share in freight transportation, the Ministry of Railways assigned RITES (Rail India Technical & Economic Services) to conduct a study on *Decline in Railways' Share of Total Land Traffic*. In fact, the study was occasioned by the observations made by the Public Accounts Committee of the Parliament, in their 96th Report regarding progressive decline in the Indian Railways share in the total land traffic in India (for details see RITES Report 1997)

The study analysed the freight traffic flows of all commodities amenable to movement by rail. It also analysed the problems of line capacity on the various routes, which connect the cities of Delhi, Bombay, Kolkata & Chennai. It attempted to identify system limitations coming in the way of the Railways in maintaining their share of land traffic. It identified specific sections where transportation capacity is under-utilised, or estimated Origin-Destination (OD) flows, commodity group-wise, along with the long lead freight traffic, which had the potential of coming back to Railways but was moving by road at that time.

The study identified some of the factors that inhibited the marketing set up on the Railways. It redefined the role of the IR's marketing organization. It also touched the issue of designing suitable packages for integrated road cum rail transport. It concluded that the Railways are not able to carry the offered traffic, especially, along the major routes. It was this inability to carry traffic, on demand, which pushed the potential customers to use the road transport as an alternative.

The study emphasised the need to recognise the fact that a level playing field has not been provided for the apparent competition between rail and road transport because investments in the Railways come out of public finance. This limitation of the Railways, severely, affects the quantum of money invested in the projects required to enable them to, effectively, compete with the roadways.

Apart from urging the Railways to develop the necessary capacity to cater to the increasing demand for rail transport, the report recommended that it is necessary to launch a major programme for upgrading freight terminals and improving terminal operations. This would help the Railways to have freight trains with dedicated locomotives. These trains can operate in a closed circuit

arrangement in order to regain the identified streams of traffic moving in bulk by other modes of transport.

Regarding the less than 'Train Load' traffic i.e. the 'Wagon Load' traffic, the study suggested that the Railways should work in close co-ordination with major road transporters to, effectively, organise a multimodal system for movement of domestic freight traffic. According to the study, the Railways should act as lessors of "moving space" i.e. wagons. They should leave other commercial aspects to accredited agencies.

This study deals with the transportation of all commodities by the Railways. It does not, specifically, cover the problems faced by the cement manufacturers or consumers in its transportation from the cement plants to the consumers' premises.

The study is about seven years old and it does not deal with the current position of the Railways when line capacity and wagon availability on the busy routes, i.e. the Golden Quadrilateral are no longer considered as major constraints by the Railways. However, the problem of fall in the share of rail traffic, in all the major high profit yielding commodities, continues to be a cause for concern for the IR

Another study on "Competitiveness of Rail Sector in Movement of Steel" was undertaken by Manoj Singh (1998), a traffic service officer of the South Eastern Railway, on deputation, to the Container Corporation of India, Kolkata. The study was completed in the year 1998. It deals with the reasons of decline in movement of steel by the IR and, at the same time, delineates the strategies that the Railways need to adopt to arrest the trend. The study is focussed on the transportation of steel. However, it touches the constraints faced by the Railways and their customers in the transportation of other bulk commodities like cement, fertilizer etc. Some of the recommendations are also applicable to transportation of other commodities. These recommendations include the following: -

- multimodal solutions,
- containerisation of consignments,
- specialised wagons for transporting steel,
- changes in the pricing structure of IR freight,
- quick settlement of claims,
- making the commercial rules more flexible and unambiguous,
- providing greater operational flexibility to suit the customers' needs,

- reduced transit time.

The report also suggests that the Railways should have strategies specific to each Steel Plant to meet the individual needs of such major customers.

In November 1998, Rail India Technical & Economic Services (RITES) conducted a study titled, "Project Kilometerage" *on Optimisation of Engine and Wagon utilisation by Indian Railways* on behalf of the Ministry of Railways. This study attempted to optimise the engine usage and wagon kilometrage in freight operations on the Indian Railways. It deals, briefly, with coal, steel, cement and petroleum traffic on the IR but has its focus, mainly, on the operations, technology and planning for making operational improvements. The study has recommended some measures to arrest the decline in railways' share of total national freight. These measures include: -

- Greater generation of internal resources by the Railways to finance development plans.
- Rationalisation of freight structure.
- Budgetary support for commodities carried below cost due to social obligations.
- Greater running of the Railways on 'business' considerations and shedding of non-essential functions and un-economic branch lines.
- Greater participation in railway projects by the private sector.
- Government of India should consider the Railways as an important constituent of the national infrastructure sector and grant them concessions as available to other constituents of the sector.

This study, however, does not recommend any marketing strategies which can be adopted by the Railways to improve their share in the transportation of total freight traffic.

The Ministry of Railways entrusted another study on *the "Factors Impacting the Mode Share and Trends in Industry Logistics."* to M/S A.F.Ferguson and Company, New Delhi. They submitted their report titled "Final Report on All India Shipper's Survey" in April 1999. The report analysed the problem of mode choice on the stated preferences of the customers surveyed. A parametric

analysis of the results of the survey was undertaken by them. The report discusses the issues of freight rates on the Railways and the implications, thereof, on the modal choice of the customers.

The above report analysed the reasons for dissatisfaction of the freight customers of the Railways. It clubbed the various commodities carried by the Railways and derived a composite satisfaction index for road and rail. The weighted average score, based on a number of quality parameters, product specifiers and hygiene factors, works out to be much higher for road than rail.

The report listed the key transport problems of the customers with the Railways and classified them into two major heads, namely, operational & commercial.

The report also made a comparison of mode choice i.e. Railway versus Road Services. These include: -

- Terms and Conditions
- Reliability & Availability
- Waiting Time
- Procedural Variances.
- Losses and Damages.

This report gives the details of a case study done by them for Dalmia Cements who were dissatisfied with the Railways due to the Railways' bureaucratic approach and slow decision-making. It states that the customers of cement, steel and fertilizers prefer road to rail for shorter leads even for 'Train Load' movements.

The report, however, does not focus on the specific problems of the Railways and their customers in the transportation of cement traffic. Nor does it deal with the marketing strategies to be adopted by the Indian Railways for recapturing some of their share of the traffic lost to other modes of transport.

In October 1999, Nalin Shingal, an officer of the Indian Railways Traffic Service, submitted his doctoral thesis on "*The Application of Stated Preference Networks to the study of Inter-Modal Freight Transport Services in India* " (1999). The thesis was submitted by him to the Institute of Transport Studies, University of Leeds. (U.K.)

This study is an attempt to develop a methodology for identifying the sectors where the domestic inter-modal services can be viable. It outlines the strategies to be adopted for the success of inter-modal services for these sectors.

As a part of the chapter on "Status of Freight Transport in India", it deals with the Indian Railways' decline in market share. It states that, in terms of quality of service, Indian Railways stand a distant second to road services due to the rigidities in the Railways' system of working and slow response to the customers' needs coupled with a bureaucratic style of functioning. The report opines that the computerized Freight Operations Information System should go a long way in solving these problems.

The objective of the study was to develop a freight transport mode choice model for non-bulk goods covering rail, road and container services. The study confines itself to the Delhi-Bombay route only. It does not recommend any marketing strategies for transportation of any of the major commodities carried by IR viz. cement, steel, fertilisers etc.

The Cement Manufacturers' Association, which represents the Indian Cement Industry, in its report entitled "*Basic Data – 2001, Indian Cement Industry*"(2001), has given the percentage of rail share and compared it with the roads' share from the year 1996 to the year 2000. However, it has not analysed the reasons for the decline in rail share of cement traffic.

The Government of India had constituted an "Expert Group On Railways" under the chairmanship of Dr.Rakesh Mohan, Director General, National Council of Applied Economic Research. The group submitted its "Interim Executive Summary" to the Ministry of Railways in February 2001.The final report of the group was submitted, in July 2001.

The report deals with the "*Policy Imperatives for Reinvention and Growth*" and encompasses the views of the Expert Group on the key issues facing Indian Railways. (Indian Railways Report,2002). The issues are:

- the demand for and supply of the Railways services with their trends and prospects.
- the investment requirements of the Indian Railways, in the short term as well as in the long term, upto the year 2016.
- the plan for financing the investment requirements.
- the financing plan for the strategic high growth scenario.
- the restructuring of the Railways.
- the plan for 'Reinventing' Indian Railways.

The report lays stress on the need to segregate the commercial and the social roles of the Railways so that it can focus on each one of them separately

and, hence, achieve the desired objectives in each function. It further concludes that IR has not been able to customize its offering to suit the changing needs of the customers and the external environment. It has suggested the integration of a clear strategy to be formulated with financial discipline and customer orientation.

Organisationally, the Expert Group has suggested an arm's length relationship with the government i.e. the IR should be seen as a government owned corporation, headed by an Executive Railway Board, on top of which, a policy making Railway Board should be formed, The group has suggested a Rail Regulatory Authority and has defined its role in the proposed set up. It has also suggested a restructuring of the Indian Railways.

Regarding the transportation of cement, the report observes that, despite a significant increase in the cement production in the country, less and less of this traffic is moving by rail due to high costs involved in rail transportation and other dissatisfiers in the movement by rail.

As a marketing strategy in the freight area, the Expert Group has suggested that Railways should actively consider introducing a yield management system with variable pricing for customers based on dynamic demand situation. It has also suggested a strategy of efficient scheduling of freight trains along with the modernization of the Indian Railways.

Another report, titled, "Indian Railways – An Agenda for Change" was submitted by the "Railways Advisory Committee", set up by the Ministry of Railways in May 2001. This report deals, mainly, with the restructuring strategy for commercialisation of the Indian Railways.

This report concludes that the corporatisation route for the Indian Railways is not appropriate in view of its complexity and size, the peculiar socio-political environment with a fractured polity and the resistance from the trade unions. It concludes that customer focus and the market forces should become the key driving forces for change. In order to achieve these objectives, it has suggested the creation of a "Railway Infrastructure Development fund" for an accelerated capacity augmentation project" and a "Rail Regulatory Authority for Tariffs and Subsidies" for protecting the interests of rail users in terms of adequacy and quality of service and also for the introduction of competition on routes capable of supporting multiple operators. The report also lays down, in detail, a crash plan for rationalization of tariffs for the freight as well as passenger segments.

In the freight segment, the report recommends that Railways should become providers of "total logistics" rather than remain as rail transporters only. It suggests that the Railways should refine their marketing packages in the light of the experience gained by them so far. It has recommended changes in the Volume Discount Scheme, in addition to increased delegation of authority to the zonal administration for quotation of station-to-station rates. The report has recommended that containing of costs by the IR should be a mission area, which includes right sizing of manpower.

It has also recommended setting up of customer service centres to provide real time information about the railway consignments to the customers.

Parthasarathy and Chakravarty have dealt with the problems of the cement industry in detail. The book entitled *Cement Industry:The Emerging Scenario* (1988) explains why the cement plants in India have come up in the form of a few clusters .It deals with the future of cement production in India. In chapter II of the Book, the authors deal with the infrastructure concerns of the industry. They state that the dependence of the cement industry on the Railways for the transport of coal as well as the final product is very high in view of the long distances involved. They go on to highlight the capacity constraints of the railways, delays in supply of wagons, proposals for bulk movement of cement and introduction of mechanised loading and unloading with modified wagons and improved terminal facilities.

Chapter V of the Book deals with "Transport Logistics". The authors argue that, as the fixed costs of the Railways are high, it is more economical for Railways to move large quantities over long distances by intensive use of their resources like locomotives, wagons and track capacity.

The comparison between transportation of cement by rail and road also forms a part of this chapter. It is concluded that road transport becomes costlier in comparison to rail transport beyond a certain lead. The break-even point for freight, in rupees per tonne, between road and rail is about 400 KMs. However, the road transport is more flexible in its rating than the railway transport. Availability of return traffic to the trucks is an important factor in determining the road freight between any two points while the railways charge telescopic rates based only on the lead of the traffic. The authors state that the road transport is becoming cheaper with the emergence of freeways, and, heavier, multi-axled trucks. The inherent advantage in road movement is the roadways' ability to provide door-to-door facility.

This chapter also highlights the problem faced by the cement industry with the Railways and suggests some ways to solve them. These suggestions include improved terminal operations, improved design of wagons, mechanisation of loading and unloading operations, closed circuit operations of dedicated trains and private sector participation in the procurement of wagons for movement of cement.

The movement of cement in bulk, Own Your Wagon Scheme of the Railways and captive rail system are discussed in this chapter. The movement of cement by inland waterways and coastal shipping is also, briefly, covered.

Chapter IX of the book has a focus on the " Changing Marketing Scenario". In this chapter, the authors highlight the changing nature of the cement market. The future in India, they feel, belongs to Ready Mixed Concrete (RMC), which is the trend all over the world where 50-80% of the cement is sold as RMC, directly, to the building sites. They feel that, in the near future, the cement industry in India should be able to export cement in bulk and compete in the international market.

This book has highlighted the difficulties of the cement industry with respect to railway transportation but has not suggested any marketing strategies for the Railways to improve the rail share in the transportation of cement.

Memorandum to Chairman Railway Board (May 2002)

Kamal Kishore, the Executive President of Maihar Cement, located in Satna District (M.P), and also the President of Madhya Pradesh Cement Manufacturers' Association, Satna, on behalf of the above association, submitted a memorandum to the Chairman, Railway Board.

The memorandum highlights the fact that freight is a major component (15-20%) of the retail price of cement. Over the years, this freight has risen disproportionately, to the road freight. The steep rise in freight by rail has forced the industry to establish split-located grinding units in high consumption markets and move the finished product i.e. cement by road over short leads. (Kamal Kishore 2002)

The memorandum states that the measures taken by the Railways, in the past, to meet the expectations of the cement industry have not been sufficient to retain the Railways' share of cement transportation. It points out inadequacies in the Volume Discount Scheme of IR and complains of denial of retention discount to the customers. It has suggested that the IR should open more destinations for

two point rakes and also allow the latest BCN type wagons to be loaded to these destinations.

It suggests permission by the Railways for moving more cement in mini-rakes, i.e. rakes with smaller payload, for various destinations, timely supply of wagons even to difficult areas for railways and the development of adequate terminals with godown facilities along the unloading lines. The above association made a presentation through its president, Shri Kamal Kishore, at the Railway Staff College, Vadodara in June 2002. This presentation was titled "Cement Industry & Indian Railways: Vision 2025". This document gives a profile of the cement industry and projects a growth rate of 6.6% per annum. The report states that the domestic demand for cement, by the year 2025, will be of the order of 450 million tonnes. In this report, the author has identified 'Fly Ash' as a new item of transportation for the manufacture of cement. Similarly, transport of pozzolana from powerhouses and slag from steel plants to consuming centres is likely to provide new avenues for rail movement. (Kamal Kishore, 2002).

The Ministry of Railways have published two "Status Papers" on Indian Railways (1998, 2002). The first one was published in May 1998 and the second in May 2002, after a span of four years. Both these papers highlight the issues and options before the Indian Railways.

The Status Paper, of 1998, discusses the loss of market share by the Indian Railways. It states that railway transportation is more energy efficient and environment friendly and, if more traffic is moved by the Railways to the extent of 60% of the total traffic, it will result in a saving of Rs.5300 crores to the nation.

The paper highlights the need to sharpen the marketing capability of the Indian Railways through constructive pricing mechanisms and tariff rationalization as also through customer focus. However, these papers do not detail the customer focus strategies to be adopted by the Railways. The marketing strategies for improving the share of cement transportation have not been discussed in any of the two Papers.

In March 1994, an expert committee, set up by the Railways, headed by Prakash Tandon and submitted its report to the Ministry of Railways. It was meant

to study the "Organization Structure and Management Ethos of Indian Railways"(1994).

According to this report, the Railways should widen their vision and regard themselves to be in the business of transportation and not railways alone.

It suggested that Railways will have to develop an integrated transportation system both for freight and passengers. However, in order to implement these strategies, the committee felt that the Railways needed to be restructured, on business lines, starting from the Railway Board's level.

This report was discussed, at length, on the Railways. Finally, the Railways decided not to implement the report.

In 1998, a study on "Marketing of Freight Traffic on Indian Railways with special reference to Kota Division of Western Railway" was undertaken by L.R.Thapar.

This study deals with the marketing strategies, which the Indian Railways need, for attracting piecemeal freight traffic, which has come down to almost negligible levels. This traffic includes a number of high rated commodities, which were, earlier, moving by rail in wagonloads. However, since the 1980s, the Railways adopted the policy of transporting, mainly, "Train Load" freight and the movement of the "Wagon Load" freight suffered a severe set back. As a result, most of the customers switched over to the roadways over a period of time.

The analysis of the reasons for the fall in the share of piecemeal traffic on the Railways will be relevant to the present study. However, the study does not deal, specifically, with the transportation of cement traffic, which is, largely, moved by the Railways in Train Loads.

M/s A.F. Ferguson conducted a study on *Development of Marketing Model for the Pilot Project on Utilization of Empty Coal Wagons*, 1997 for the Ministry of Railways. The terms of reference of the report also included.

a) Identification of key service parameters for the service product such as: -

- Transit Times

- ♦ Reliability and Punctuality
- ♦ Security etc.

b) Analysis of competitive scenario to assess the strengths and weaknesses of IR in terms of:

- Service Parameters
- Economies
- Infrastructure
- Likely changes in Competition

c) Formulation of a market strategy for the pilot project in terms of

- Options for service product mix
- Benchmarks for service parameters vis-à-vis competition
- The changes required in the IR infrastructure and operating procedures
- System required.

The report analysed the pattern of traffic according to the terms of reference and suggested the following marketing strategies for the Indian Railways: -

- ♦ Enter Semi-Bulk and Parcel Segment.
- ♦ Reorient towards offering complete transport service rather than just wagon space.
- ♦ Service Institutional customers separately by a single point contact and small customer through freight forwarders etc.
- ♦ Cater to commodity specific transportation needs by reorienting level of transport product for each commodity cluster.
- ♦ Reorganise logistically to service the dispersed market and improve infrastructure accordingly.
- ♦ Improve service levels being offered to customers to match if not better the competition.
- ♦ Bring about changes in wagon design to transport semi-bulk and parcel segments.

The report further identified the core service parameters as

- Suitable freight rates.
- Availability of wagons
- Scheduled delivery must be adhered by the Indian Railways. In addition, it observed that assurance on pilferage shortage and

damages are also very critical irrespective of the commodity offered by customer.

The report recommended commodity specific action plans to attract these commodities from roadways to utilise the empty flow of wagons from the northern India to the eastern region.

Another report published by National Economic Research Associates for the office of the Rail Regulator, London (U.K.) identified the Potential for Rail Freight in the United Kingdom (The Potential for Rail Freight, 1997). This report studied the reasons for fall in the rail share of freight traffic in British Railways and identified price, service quality, reliability and flexibility as the factors, which are important to the customers of rail freight in Great Britain. The report recommended that additional freight traffic brought back to the railway system should be charged at a rate very close to the marginal cost.

T. Stanley Babu, the then Chief Operations Manager of Southern Railway, gave the following suggestion for a customer friendly freight marketing policy:

- Acceptance of conditional indents by Railways.
- Wagon supply as per customer's choice.
- Permission by the Railways to change destinations of freight indents without any penalty subject to normal restrictions in force.
- The system of payment of freight, by the customers should be made more rational and convenient for the customers.
- Volume Discount Scheme should be extended to coal, petroleum and fertilizer traffic
- The Railways should provide total transport solutions at competitive freight rates.
- Development of a network of railway agents who will act as the interface between the Railways and their customers.
- Rules for working of sidings should be made customer friendly.

The above suggestions are general in nature and do not, specifically cover the marketing strategies needed for improving the Railways' share in the transportation of cement.

The Centre for Transportation Research and Management, New Delhi, organized a National seminar on "Pricing of Transport Services" at New Delhi on 11th Feb. 2000. In this seminar, G.K.Kanchan, a former Additional Member

(Planning), Ministry of Railways, presented his views on "Cement Industry - Opportunities and Aspirations ".

He discussed the problems faced by the cement industry and the transportation of cement by rail. He argued that there is a case for the Indian Railways for lowering cement freight rates to cost plus reasonable profit. He criticised the Railways for the poor service conditions and their total disregard of customer service approach. The railway rules and procedures, according to him, have become demarketing strategies. He deplored the lack of simplification and decentralization of authority on the Railways.

The Railways, according to him, must overcome the above shortcomings and become more customers focussed to avoid loss of market share in cement transportation.

Kanchan also discussed the issues of cement transportation with Rakesh Mohan who submitted a report titled "The Indian Railway Report" to the Railway Board. In this meeting, he made the following suggestions for the Railways: -

a) The Railways can improve the share of cement transportation by improved marketing strategies. The result should be seen as a relationship between the increased production of cement per month and the increased loading of cement achieved on the Railway.

b) The Railways commercial rules should be simplified on the principle that the "Customer Is Right ".

c) Elimination of cross subsidization and reduction of freight rates to become competitive with road.

d) Railways should establish transparency about the cost of service. The price of transportation should be related to the marginal cost.

e) Increased use of information, particularly, in the sidings of a large number of customers where information can be exchanged on Fax, thereby, eliminating delays.

f) The 1989 Railway Act should be made customer friendly.

g) The Railways should have a system of penalty on itself if it fails to supply wagons in time.

h) The Railway transportation system should involve the industry. The industry should not be dependent on the vagaries of the thinking of the Railways alone.

i) Railway should not impose frequent restrictions to inhibit the free flow of goods. If there are constraints, at the terminals or enroute, the Railways should develop adequate line/terminal capacity.

j) The Railway must give a reasonable guarantee of transit time so as to eliminate the inventory cost to the customers.

k) The settlement of claims on the Railway should be streamlined. Genuine claims and the settlement of the claims should be done within a reasonable time.

In another lecture, organised by the Institute of Rail Transport, the following suggestions were made by G.K. Kanchan.

- Siding rules are outdated and are heavily biased towards the Railways. These should be revised and be made customer friendly.
- The carrying capacity of wagons should be fixed in a realistic manner based on the commodity to be carried.
- The cost of private sidings made by the Railways for their customers is prohibitive. It is not related to the quantum of the traffic to be carried for/from the sidings.
- The sidings should be given a credit/debit system for levying demurrage on wagons dealt with in the siding. This system should adjust the debit/credit on a monthly basis. Such a system has been accepted for steel plants but has not been extended to the cement plants by the Railways.
- A guarantee of clearance of the traffic should be given by the Railways to the cement Industry.
- The concept of idling of wagons should be properly defined by the Railways keeping the customers' interests in view.
- The rationalisation order of the Railway should be scrapped. The goods must be carried by the shortest route and charged by the cheapest route.
- The young officers on the Railways must be encouraged to take policy decisions concerning the organisation.

Ambuja Cement Corporation gave the following suggestions in a meeting held with the Railways on 1st July 1998:

- Payment of the Railway staff in the sidings should be made by the Railways and not by the customers.

- Time and motion studies for the various siding, as per the Railway Board's circular of 1995, should be completed by all the Railways at the earliest. Reasonable free time should be given to the sidings for handling the wagons.
- The rules for gauge conversion of a siding, where the Railways have decided to convert the main line section from MG to BG, should be revised. The cost of the construction of the siding should be borne by the Railways.

K. Neelakanthan, a retired Officer of the Indian Railways Traffic Service, in his article on "*Movement of Bulk Traffic – A case for Realistic Appraisal of Freight & other Charges*" published in the Rail Transport Journal (January to March 2000) stated that the Railways are, inherently, suited for bulk movement. Most items of such bulk movement are profitable for the Railways.

He recommended that, as a marketing strategy for their bulk customers, the Railways should: -

- Abolish siding charges.
- Post commercial and train examination staff at the sidings at the Railways' cost.
- Provide an incentive for faster release of wagons over the norms fixed.
- Reduce the minimum distance for charge keeping in view the present patterns of movement of bulk traffic.
- 'Train Load' rate is a lower rate. Its benefit should be given to all commodities moving in trainloads irrespective of the handling capacity at the unloading terminals.
- Modify the 'Train Load' concept to make it customer friendly.
- Standardise the chargeable weight for various types of wagons.
- The Rationalisation Order of the Railways should be amended so that customers are not charged more freight in case the traffic has to be moved over a longer route due to railways' operational constraints.
- The Railways should lower the freight rates by reducing costs. This can be done by stopping the subsidy given to passenger traffic by increasing the freight traffic rates of commodities moving in bulk.

The strategies suggested above are of a general nature and need to be examined for their applicability to the transportation of cement traffic on the Indian Railways.

A research article on "*Service Quality Measurement – The Case of Railways Freight Services*" was published in Vikalpa-Vol.25 No.3 in July-September, 2000.

The article authored by G. Shainesh and Mukul Mathur, mentions about 'RAILQUAL' – a 50 item instrument for measuring the quality of service. It is based on the concepts of quality of service developed by M/s A.Parasuraman, V.A. Zeithaml and L.Berry.

R.K.Thoopal, a retired Member (Traffic) of the Railway Board, wrote a book titled " Vision 2010 – Indian Railways" (2000).

He has suggested the following action plan for the Railways:-

- Railway freight pricing has to be in tune with cost and price of competing transport sectors.
- Cross-subsidisation of passenger traffic services should be reduced to a minimum by reducing freight service rates.
- Preferential Traffic Schedule of the Railways should apply to only10% of their wagon fleet. The rest of the wagon fleet should be committed on contract to individual customers.
- The Railways should give more concessions to customers having a higher share in rail traffic.
- Demurrage should be an incentive. It should not be punitive.
- Railways should have strategic tie-ups with the warehousing industry.
- Introduce 'e-commerce' for dealing with major freight customers.
- The Railways should move away from rail orientation to transport orientation.

The suggestions given by Thoopal, however, need to be examined in detail as far as the transportation of cement by rail is concerned.

ET Intelligence Group published a book on "*Supply Chain Logistics 2002*" containing an article on "*Travails of Cement Travel*". It highlights the fact that high distribution expenditure is posing a significant problem for cement manufacturers who are devising ways to cut costs. The article adds that waterways carry only one percent of the cement production of the country. As a result, the cement movement in India is dominated by road and rail travel.

According to the study, the share of transportation of cement by road has increased over the years due to the following reasons: -

- Wagon availability on the Railways has not improved.
- Road transport is more flexible.
- Rail travel is economical only for longer leads beyond 350-400 kms.
- The current trend is to localise manufacture and distribution of cement.
- Rail transportation is possible only where a company has to transport at least 55 tonnes to a place, which is more than 350 kms away from the loading point.
- Due to double handling, there is a loss of 2% of cement in transit even though railway transportation is faster. (A train travels about 1100 kms per day as per the World Bank records).

The article concludes that the cement manufacturers must maximise bulk movement of cement to make its transportation more economical. However, it does not go into the marketing strategies to be adopted by any mode of transport for increasing its share.

The Railway Staff College at Vadodara, held a seminar on "*Indian Railways – Vision 2025" in June 2002.* A set of papers was read on " Transport, Markets and Competition - Freight". In this seminar, a number of speakers presented their views.

In this Seminar, A.Ramji, ex. General Manager of S.E. Railway and currently, Adviser to RITES suggested that:

- Railways have to become part of the supply chain and provide logistics along wit seamless services, which the customer demands.
- Strategic partnerships as well as incentives for user funding, a professional business culture and rationalisation of the tariff structure, incorporating a market driven flexible pricing system, are essential for Railways.
- The change process on the Railways should be constituted of organizational restructuring and visionary leadership.

Ashok Awasthi, the then Chief Operations Manager of the Central Railway, stated that the Railways should:-

- Be a total solution provider.
- Offer warehousing/storage
- Offer special type of wagons for special commodities.
- Have a system of consignment tracking.

- Offer a rationalised Railway Freight Structure.
- Have different rates for different customers.

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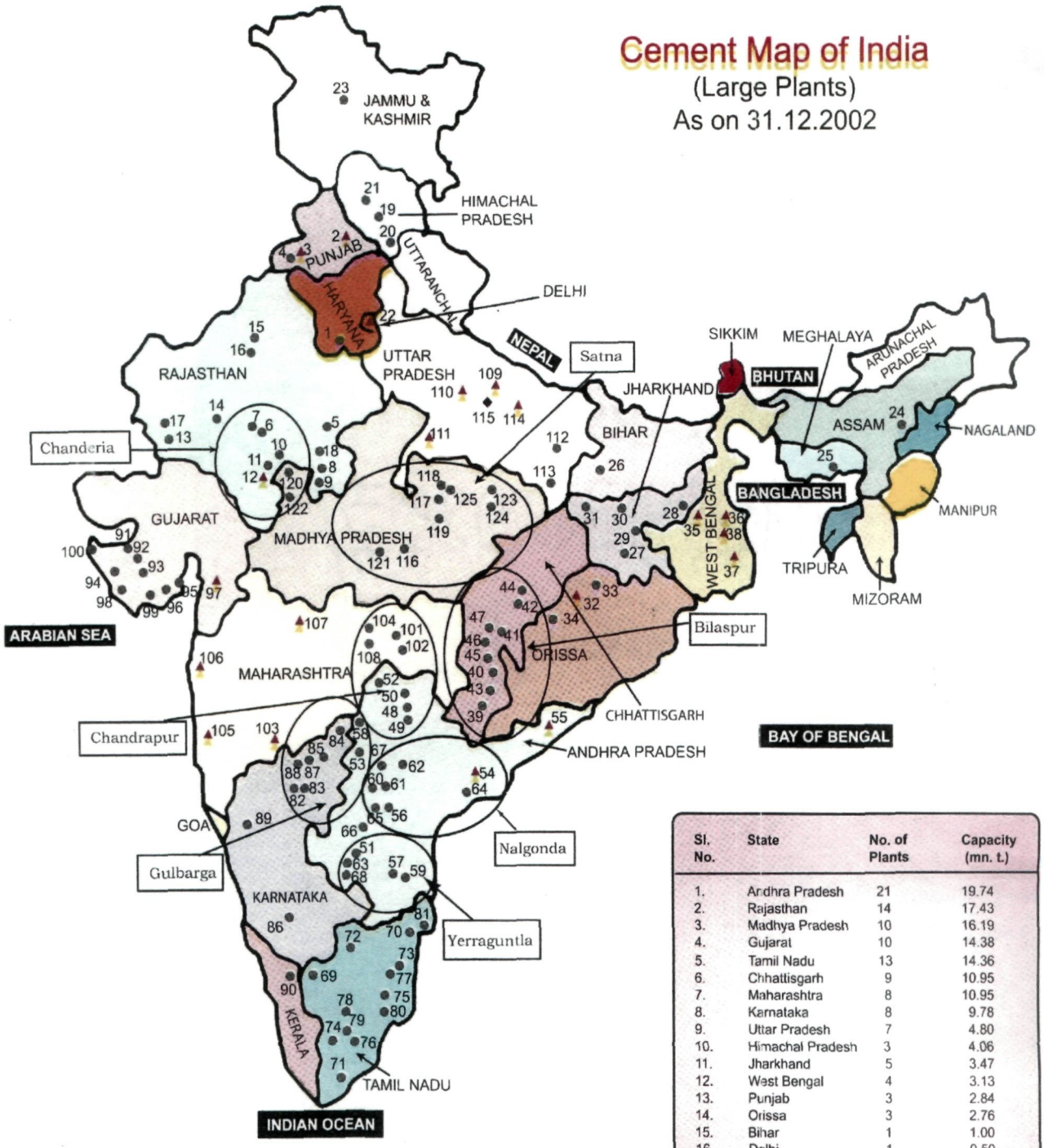
Cement Map of India

(Large Plants)

As on 31.12.2002



Sl. No.	State	No. of Plants	Capacity (mn. t.)
1.	Andhra Pradesh	21	19.74
2.	Rajasthan	14	17.43
3.	Madhya Pradesh	10	16.19
4.	Gujarat	10	14.38
5.	Tamil Nadu	13	14.36
6.	Chhattisgarh	9	10.95
7.	Maharashtra	8	10.95
8.	Karnataka	8	9.78
9.	Uttar Pradesh	7	4.80
10.	Himachal Pradesh	3	4.06
11.	Jharkhand	5	3.47
12.	West Bengal	4	3.13
13.	Punjab	3	2.84
14.	Orissa	3	2.76
15.	Bihar	1	1.00
16.	Delhi	1	0.50
17.	Kerala	1	0.42
18.	Jammu & Kashmir	1	0.20
19.	Assam	1	0.20
20.	Meghalaya	1	0.20
21.	Haryana	1	0.17
	Total	**125**	**137.53**

CHAPTER – III

THE INDIAN CEMENT INDUSTRY AND ITS MODES OF TRANSPORT

Cement is an essential commodity. It was under the control of the Central Government for a long time – both in respect of price and distribution of the cement produced. In 1982, as a first step, the Govt. removed these controls partially However, in 1989, all the controls were completely removed. As a result, the shortage of cement in the country, gradually, disappeared and the production continued to grow to match the demand. At present, there is a stiff competition among the cement companies to market their product because the supply has outstripped the demand. The cement producers are now making efforts to export cement to other countries. In fact, even clinker, which is used to make cement, is being exported.

As on 31st March 2002, according to the Cement Map of India, (Basic Data 2002) there are 124 large cement plants in India having an installed capacity of 135.03 million tonnes (mt). The actual production, in the year 2001-02, was 102.4 million tonnes (Kamal Kishore 2002). The above figures do not include 365 mini cement plants with an installed capacity of 11.10 million tonnes while their actual production was 4.0 million tonnes in the year 2001. The Cement Map of India is shown at page 50.

3.1 *Growth of Cement Industry and Formation of Clusters*

Limestone is the main raw material, which goes into the manufacture of cement. It is a natural mineral and its deposits are found in only a few States in the country. This situation led to the formation of clusters of cement plants around the areas where the cement grade limestone was available along with infrastructure, like rail, road and power etc.

At present, there are seven clusters of cement plants in India These are shown in the cement map of India.

These clusters produce about 66.68 million tonnes (Kamal Kishore 2002) of cement out of a total production of 102.4 million tonnes from the large plants. The cluster wise performance is given in Table 3.1.

Table 3.1 Clusterwise Performance Of Large Cement Units (2001-2002) (000 Tonnes)

Sl No.	Cluster	Capacity	Cement Production	Cement Despatches	Clinker Production
1.	Satna Cluster	12785.00	12262.22	12215.15	12859.20
2.	Chandrapur	8430.08	6387.18	6418.18	6387.83
3.	Cluster	10872.34	7553.36	7545.59	8283.35
4.	Gulbarga Cluster	7403.34	5219.47	5264.29	5022.41
5.	Yerranguntla	6437.35	4577.41	4586.19	4035.28
6	Cluster	11287.32	8626.42	8633.11	8346.07
7.	Nalgonda Cluster	9460.83	8156.70	8184.57	7502.22
	Bilaspur Cluster				
	Chanderia Cluster				
Total Clusters		66677.19	52783.46	52847.08	52436.35
%age of Total		51%	52%	52%	59%

Source: - Kamal Kishore, Cement Industry & Railway: Vision 2025

The cement plants in these clusters account for 51% of the total capacity of large plants and 52% of the total production in the year 2001-2002.

In order to get the benefit of economies of scale, the new plants are having a manufacturing capacity of more than a million tonnes per annum of cement. This factor has heightened their concern for infra structure facilities like road, rail and power etc. Some of the large units have gone for captive on plant power generation.

The number of cement plants in each state along with the total installed capacity of the plants, as on 31.3.2002, is given on the next page.

Table 3.2 **Installed Capacity of Cement Plants (As on 31.3.2002)**

S.No.	State	No. of Plants	Capacity
1.	Andhra Pradesh	21	20.44
2.	Rajasthan	14	17.43
3.	Madhya Pradesh	10	16.19
4.	Tamil Nadu	13	14.16
5.	Gujarat	10	13.38
6.	Chhattisgarh	9	10.95
7.	Karnataka	8	9.78
8	Maharashtra	7	8.95
9.	Uttar Pradesh	7	4.80
10.	Himachal Pradesh	3	4.06
11.	Jharkhand	5	3.47
12.	West Bengal	4	3.13
13.	Punjab	3	2.84
14.	Orissa	3	2.76
15.	Bihar	1	1.00
16.	Delhi	1	0.50
17.	Kerala	1	0.42
18.	Jammu & Kashmir	1	0.20
19.	Assam	1	0.20
20.	Meghalaya	1	0.20
21.	Haryana	1	0.17
	Total	124	135.03

3.2 Problem Areas of the Cement Industry

The process of manufacturing cement depends a lot on the availability of raw materials and power, while the manufactured cement has, of necessity to be transported over long distances. For this purpose, the availability of road/rail transport is a must. Even for the receipt of raw materials like limestone and coal, the availability of facilities for the transportation of these materials is essential.

The concerns of the cement industry can thus be classified into the following areas:

- Transportation by Rail/Road/Other modes.
- Supply of coal.
- Supply of Power.
- Environmental concerns.
- Increased competition.

We will take up these areas, one by one, in order to understand how they affect the production and marketing of cement by the cement companies.

Transportation

a) Railways

The supply of limestone and coal, which form the major material inputs for the production of cement, is, mostly, rail borne.

The supply of coal has to be made from the coalfields in the Eastern and South Eastern India, while a majority of the cement units are situated in Western, Southern and Central India. Coal has to be transported in large quantities to the cement plants over long leads of about a thousand kilometers. Thus, as a necessity, cement, which is the finished product, has also to be transported to fairly long distances. Since most of the large plants have gone in for private railway sidings for receipt of raw materials, railways was also the preferred mode of choice for dispatches of cement to the markets for a long time, for captive supplies of fuel and power as they cannot afford any breakdown of these inputs. Thus, there has been a shift towards backward integration. The government has also invited private participation in the infrastructure sectors because of resource constraints of the public sector.

However, as there were a number of constraints in the movement of cement by rail, the cement industry had to think of alternative modes of transport. (Kamal Kishore 2002).

The problems faced in the movement of cement by rail are:

i) Inadequate supply of wagons according to the demands of the cement plants, particularly, in Central and Western India comprising of the States of Madhya Pradesh, Rajasthan, Gujarat and Andhra Pradesh.

ii) Inadequate line capacity on critical sections, of Indian Railways. These include movement of cement into the North Eastern Region, Bombay-Ahmedabad route, Bombay suburban areas of Central and Western Railways and Vasco-Londa-Hubli section of the South Central Railway (RITES 1997). Railways, are presently, moving only about 35% of the cement produced by large cement plants.

b) Roads & Waterways

Road transport is moving over 50% of the cement traffic at present, its magnitude was of the order of 64 million tonnes in 2001-02 (Kamal Kishore 2002). The share of roadways in the movement of cement has increased, over the years, due to the construction of highways, availability of heavy-duty trucks and the roadways charging lower freight rates as compared to railways.

The roads are, however, not economical for movement of large quantities over long leads beyond 500 kilometers. Inland waterways and coastal shipping in India are not fully developed due to infrastructure problems. Thus, these modes do not carry any significant quantity of cement in the country. The movement of cement, in bulk, by ships can be economical if suitable terminals are provided for the purpose. Also, there is a considerable scope for the movement of clinker from clinkerisation units to coast-based power plants for the manufacture of blended cement called Pozzolona Portland Cement (R.Parthasarathy 1998).

Supply of coal

Coal, a fuel, is essential for the purpose of clinkerisation. The cement industry has been facing shortage of coal over the years. At the same time, the quality of coal, supplied to the cement industry, has also been declining.

The industry has resorted to import of coal but this has helped only those units, which are located, near the sea coast. A few other units have also tried

getting supplies of lignite from the Neyveli Lignite Corporation, who can supply only a limited quantity that can be blended with coal and used for cement production. Keeping the increasing shortage in view, the government has permitted the cement, power and steel sectors to have captive mines to meet their demand of coal. However, the cement industry has not made any headway in this respect so far.

Power Supply

Power shortage, for the industries in general, and the cement industry, in particular, has been a chronic problem. The cement industry, therefore, has been forced to augment its power supply by installing captive power plants. The captive power generating capacity in large cement plants, as on 31.12.2001, has been of the order of 1634 Megawatts (Kamal Kishore 2002). Its break up is as follows:

Diesel	1096.83 MW
Thermal	457.35 MW
Wind Farm	80.25 MW
Total	1634.43 MW

Thus, in times to come, availability of power shall continue to be a serious constraint with the cement industry.

Environmental Concerns

The cement industry is highly energy intensive .It uses fuels like coal and diesel for production of cement. Mining of limestone for the manufacture of cement has also caused concern for the protection of environment. Having a technologically advanced and efficient system of cement production so that the wastage of energy is brought down to the minimum can solve the problem. Computer controlled, and on line, management control of various aspects of production will reduce the energy required for cement production.

The control of pollution by the use of electrostatic precipitators (ESP's) and filters will help control the pollution in and around the plants. Use of better quality of coal will also be essential for controlling pollution.

3.3 Extent of Competition

The removal of government controls over the distribution and pricing of cement has resulted in a large-scale increase in the installed capacity of cement plants. In 1982, the production capacity of cement plants was only 31.78 million tonnes. By the year 2002, this capacity increased to 135.03 million tonnes. During the same period, the production of cement increased from 22.5 million tonnes to 102.4 million tonnes. This makes an increase of 55 per cent in twenty years (Kamal Kishore 2002) At present, the supply of cement is more than its demand. This situation has resulted in a fierce competition among the cement producing companies. Branding of cement, produced by individual companies, is being used to convey a superior perceived image of quality to the users. The cost, quality and varieties of cement are getting special attention from all major producers of cement who are using their marketing skills to boost demand for their brands. Thus, as against Ordinary Portland Cement (OPC), which was the only brand available earlier, a number of varieties are being produced to suit various applications. For example, quick setting cements with compressive strengths of 33,43 & 53 grades are being produced. Pozzolonas and blended cements have increased the competition and lowered the market price of cement. The individual producers have, therefore, resorted to streamlining their distribution system also so that they can stay ahead of the competition and increase their market share. Improvements in packaging including use of paper bags, movement of cement in bulk and production of Ready Mixed Cement (RMC) are some of the measures adopted by them to meet the concerns of their consumers.

3.4 Salient Features of the Cement Industry

The cement industry in India has certain special features, which determine its requirements and influence its marketing strategies. Some of these are: –

a) Longer Leads of Movement

Average lead of coal from the collieries and the average lead to the markets for cement in India are higher as compared to the same in most other

countries Longer leads result in a higher element of freight in the cost of cement and, consequently, its sale price in the market In India, the freight forms about 15 – 20% of the cost while in other countries, it varies between 5 – 10% (R Parthasarathy 1998)

The reasons for the high proportion of freight in the cost of cement in India have been analysed These are

(i) Skewed distribution of limestone Reserves

(ii) Concentration of cement production capacity in certain areas called clusters

The skewed distribution of the limestone reserves is a phenomenon, which is beyond the control of cement industry The plants, therefore, have to be, located where adequate and suitable 'cement grade' limestone reserves are available Limestone is available in only a few States in the country These are Madhya Pradesh, Andhra Pradesh Rajasthan, Gujarat, Karnataka, Tamil Nadu and Maharastra

The availability of limestone in only a few States has resulted in the formation of clusters of cement plants In future also, the cement production capacity is likely to remain concentrated in these clusters This will, result in the increased leads for cement despatches as also for the supply of raw material/fuel such as coal and diesel oil/furnace oil to the plants

While assessing the infrastructural requirements for the cement industry, the location of a large number of plants in clusters will form a very important consideration

b) Heavy Investment Costs for Increase in Production Capacity

Expansion of capacity for cement production has proved to be highly capital intensive The investment cost per tonne of cement capacity used to be Rs 650/- per tonne in the early 70s This rose to Rs 1550/- per tonne in the 80s and has further moved up to Rs 3500/- per tonne by the end of 1997 (R Parthasarthy 1998) Thus, in order to take advantage of economies of scale, the cement industry will tend to increase the leads of coal and cement further Cement, being a high-volume and low priced commodity, tends to become costly if the leads are longer Longer leads result in a higher component of freight, both, for the inputs like coal, and also for the cement produced Limestone deposits are limited in number The cement plants have, therefore, been located close to

these deposits, thereby, forming clusters. This has increased the leads, causing a higher element of freight, which is directly proportional to the leads.

Despite enjoying this inherent advantage with the cement industry, the Railways are still losing their share to other modes of transport. The background of such a situation needs a detailed investigation and is, therefore, the subject of the present study.

3.5 Transport Modes of the Cement Industry

The Cement Industry is of the view that the rail transport is not fully meeting their needs at present Even for the future, they feel that the Railways will not be able to meet the same for a number of reasons. Some of these reasons are: -

(i) Resource constraints of the Railways (R.Parthasarathy 1998)

(ii) Suitability of the Railways as a mode of transport.

(iii) Transit Time.

(iv) Cost of Rail Transportation.

Other alternatives for movement of cement from the plants to the consumption centres are: -

i) Roads

ii) Inland Water Transport

iii) Coastal Shipping

Roads

- Roads are economical upto distances of 300-400 KMs. In certain cases, road movement would be economical even for leads upto 500 KMs. The movement, however, suffers from the limitation of being uneconomical over longer leads for the cement traffic.
- The National /State highways are also congested. This results in increased transit time for the consumers.
- Truck loading facilities in most of the plants are limited.
- A large number of trucks would be required if all dispatches are to be undertaken by road. Availability of such a number would pose its own problems. At the same time, it is also difficult to organize and control the movement of a large number of individual road vehicles.

- Total dependence on roads will reduce the competition with the Railways and road freights will consequently go up.
- The rated carrying capacity of a truck is 9 tonnes. However, most truck operators are overloading the trucks in order to compete with the Railways. If the State Governments enforce the regulation of not loading more than the rated carrying capacity of a truck, road transportation of cement will become less competitive as the transporters will have to raise their freight rates.

Inland Water Transport (IWT)

Although, in the past, waterways were very popular for the movement of freight traffic in the country, yet, at present, this transport is confined only to a few States. A large number of navigable waterways are available in the various States. The length of the major waterways in the various States is given here. West Bengal, 2337 KMs; U.P., 2441 KMs; Andhra Pradesh, 1999 KMs; Assam 1983 KMs; Kerala, 1548 KMs; Bihar, 1262 KMs; Orissa, 985 KMs; Maharashtra, 501 KMs; Karnataka, 444 KMs; (R. Parthasarathy 1998). Inland Water Transport Routes are given in Table 3.2.

Table 3.2

Sl.No.	IWT Route	Distance KMs
1	River Godavari (from Bhadrachalam Flotilla to Rajamundry)	150
2	River Krishna (from Nagarjunsagar Dam to Vijayawada)	192
3	West Coast Canal (from Kovalam to Kasargode)	560
4	River Ganga (from Patna to Haldia)	950
5	International Waterways (from Haldia to Guwahati via Bangladesh)	1300
6	River Brahmaputra (from Dhubri to Diburgarh)	650

Source: - R.Parthasarathy, Indian Cement Industry 1998

Another constraint in the movement of cement by waterways is the carrying capacity of vessels which ranges from 400 tonnes to 1200 tonnes only.

Since the movement of cement by waterways involves transhipment with road/rail, the quantum of traffic carried by inland waterways will depend on the

availability of infrastructural facilities and the economic speed of their operation. This movement is likely to increase in the near future with the improvement in the infrastructural facilities in terms of barges, terminals and properly maintained waterways which are available for day as well as night navigation. Another requirement for movement of cement by waterways would be that the barges used for the transportation of cement will have to be covered as cement gets damaged by wet.

Coastal Shipping

This mode of transport is suitable for the movement of bulk traffic over long distances. Coastal shipping can be used for transporting cement and clinker also. The cost of transportation can be minimized if well-designed vessels and terminals for handling of cement can be made available at the ports.

Coastal shipping has not become popular because of the advantages of roads and railways over it and also because of congestion in ports along with poor development of facilities for speedy movement into and out of the ports. With the increase in the railway freight, coastal shipping should become viable if efficient ships and barges can be employed. At the same time, facilities for faster loading and unloading at the ports will have to be organized.

The west coast is already being utilized for movement of bulk cement, clinker and coal. The cost of transportation is lower than that of rail/road and there is a scope of further increasing this traffic by providing terminals and transhipment points, which can handle the traffic more efficiently.

Coastal shipping will be, particularly, useful for movement of clinker to grinding plants that are situated near the coast based thermal plants or steel plants. Thermal plants can supply fly ash while the steel plants can supply granulated slag for making blended cement.

3.6 Changing Scenario of the Cement Industry

New Marketing challenges

The end of the control era, in 1989, was a turning point in the history of Cement Industry. A situation of shortages turned into one of surpluses with new players entering the market. The production capacity in the country had a marked increase in the years that followed and, soon, it overtook the demand. The

competition became tougher and the cement companies had to revise their marketing strategies to sell their product.

Changing Needs of Consumers

The needs of the consumers also changed as the building construction work became more sophisticated. The competition among the cement companies offered greater varieties of cement for differentiated needs. With the increase in production, there was a need for a bigger market. This seemed feasible because a growth rate of about 6 to 8% was available in the market in the nineties. There is optimism in the cement industry, as with the growth of economy and liberalisation, the per capita consumption rate of cement is bound to increase. The per capita consumption of cement in India, in the year 2000, was only 99 kg (Kamal Kishore 2002) while the world average was 293. Some countries like Korea & Taiwan are having a consumption level around 900 kg. The U.S.A had a per capita consumption of 397 kg in the year 2000.

Growth of Cement Consumption in India

The economy of the country is, presently, growing at the rate of 5 to 6 per cent. The rate of growth is expected to go upto 8 per cent with the liberalisation and privatisation measures being taken by the government. The consumption of cement in the country will also, therefore, go up. The working group on Cement Industry for the Tenth Five Year Plan has concluded that, for every 1.1% increase in G.D.P, the cement consumption in the country will go up by 1.2%. The group has projected the cement demand by the end of the X Plan (Year 2002-2007) as follows: -

(Million tonnes)

	Period (2002-2007)	**Domestic Demand**	**Export**	**Total**
i)	Low Growth scenario 5.5% GDP growth	143.79	4.5	148.29
ii)	High Growth scenario 8% GDP	160.56	5.0	165.26

It has been estimated that, at a modest GDP growth rate of 5.5%, the cement consumption will increase at the rate of 6.6%. In the year 2025, the domestic demand is likely to increase to 450 million Tonnes.

The main drivers of such a growth in the country are:

- Increasing economic standards will encourage building activity.
- Increase in per capita income will increase consumption of all goods including cement.
- The increasing population of the country will need more housing and other similar infrastructure.
- The industrialisation in the country will grow. The industrial infrastructure will, therefore, have to grow.
- As the economy grows, people in the rural sector will go in for cement concrete houses, which will replace the mud houses.
- The roads and, even, highways will be made of concrete which provides a better and more durable surface than bitumen.
- Export of cement is bound to go up.
- With the increase in demand and, consequently, the production of cement, the requirement of coal, limestone, slag and fly ash for the manufacture of cement will also go up.

The requirement of fuels, such as, coal, both indigenous and imported, petroleum coke and lignite will go up to about 24 million tonnes (Kamal Kishore 2002) by the end of the Tenth Five Year Plan (2002-2007). Import of coal by the Cement Industry has already started. The quantum of coal import, during the above period, is likely to be 5.30 Million Tonnes,

- **Blended Cement**

The above-referred working group has concluded that the consumption of blended cement will go up. Blended cement will form about 60% of the total production every year. At the same time, the cement industry will be utilising about 45 million tonnes of waste material by the end of the plan period. The break-up of the waste materials likely to be used is shown in Table 3.3.

Table 3.3

(million tonnes)

Waste Material	Generation per Year	Utilisation/Year
Fly Ash	120	20
Steel Slag	6	2.5
Blast Furnace Slag	14	10
Phosphogypsums	8	5
Lime sludge	6	3
Red Mud	4.5	2.5
Total	161.5	45.0

Source: - Kamal Kishore, Cement Industry & Railways, 2002

Since the limestone deposits in the country are limited, there is a move to consume these deposits, slowly, to the extent possible, by the production of a new product called 'blended cement'. This product is a blend of clinker and fly ash or granulated slag. Fly ash is easily available in the thermal power stations while granulated slag is a waste product of the steel plants. Fly ash, as well as slag, are source of environmental pollution and their disposal poses serious problems. Use of these materials to produce blended cement is, therefore, a welcome practice. However, this practice requires the production of cement in split locations. Clinker is produced in mother units, which are located near the limestone deposits. The grinding unit has to be located near a thermal powerhouse or a steel plant. Incidentally, this practice also helps the cement companies to compete more effectively because clinker can be transported in open wagons to the grinding units at cheaper rates.

The blended cement can be produced by the cement industry to meet the standard specification governing the quality of cement in India and abroad. According to the B.I.S. standards, blended cement can be produced by adding blast furnace slag upto 65% or fly ash upto 35%. In the year 2001-2002, the production of blended cement was 43% (Kamal Kishore) (2002) of the total cement production by the large cement units.

3.7 Cement Industry – Prospects

At present, there are 124 large cement plants in India. Out of these, there are 63 plants, each having a capacity to produce one million tonnes of cement per

annum These plants are controlled by 54 companies which employ a manpower of, approximately, 1.35 lakh persons. The total turn over of these companies, in the year 2001, was 6000 million U.S dollars.

In order to meet the challenge of the new liberalised era, the cement companies are going through a process of consolidation. This includes mergers, acquisitions and strategic alliances. The production of the top ten cement companies/groups, in the year 2001-02, is shown in Table 3.4

Table 3.4

S.No.	Group	Production (Million Tonnes	Percentage of Total
1.	ACC	12.275	11.99
2.	L&T	11.941	11.66
3.	Grasim Industries	10.188	9.95
4.	Gujrat Ambuja	9.828	9.60
5.	India Cement	5.794	5.66
	Sub Total	50.028	48.86
6.	Century Textiles	5.141	5.02
7.	J.K. Group	4.908	4.79
8.	Birla Corporation	4.171	4.07
9.	Jaypee Group	4.269	4.17
10.	Lafarge	3.837	3.75
	Total	22.329	21.80
	Others	30.043	29.34
	Total	102.401	100.00%

Source:- Kamal Kishore, Cement Industry and Railways, 2002

The above details show that about 49% of the cement production was done by the first 5 companies namely ACC, L&T, Grasim. Industries, Gujrat, Ambuja and India Cements.

The next five large groups consisting of Century Textiles, J.K. Group, Birla Corporation, Jaypee Group and Lafarge, produced about 22 percent of the

cement in the country. Thus these two large groups consisting of 10 large companies, control about 71 percent of the cement production.

The process of consolidation of the Cement Industry is continuing and the major players have acquired a strategic hold over the production & distribution system. As a follow up of these strategies, Gujarat Ambuja has acquired a 14.45% stake in ACC, which is having a production capacity of 15.9 million tonnes. This accounts for a total capacity of 26.6 million tonnes for the two companies.

Grasim Industries has increased its capacity to about 29 million tonnes by acquiring a 10% stake in L&T. They have made plans to produce cement for both the companies at the same location.

Lafarge, a large French Cement Company, has acquired a controlling stake in Arasmeta (2.24 million tonnes), thereby, increasing their capacity from 2.25 million tonnes (Sonadih plus Jojobera grinding unit) to about 4.49 million tonnes.

Zuari Cements has acquired Vishnu Cements, which was controlled by India Cements earlier.

There are reports that the India Cements group are planning a joint venture with an Italian firm, Italcementi, who are already having a majority stake in Zuari cements with their plants at Yeraguntala (capacity 1.7 million tonnes) and Vishnu Cements (capacity 1.3 million tonnes) in Andhra Pradesh. With this strategic alliance coming into operation, K.K.Birla group, having a 32.5% stake in Zuari Cements, may surrender their control to the new alliance.

The effect of such alliances, merges & acquisitions will be greater synergies and lower costs of inputs, production processes, marketing and distribution for the cement industry.

Split Grinding Units – on the Increase

Production of cement through split grinding units is a concept, which has caught the imagination of the Cement Industry a few years ago and has become a reality. More and more cement companies are locating the cement grinding units closer to thermal plants or steel plants and the centres of consumption. They can produce blended cement which is cheaper and, at the same time, meets with the Indian and International standards. A list of such units is given in Table 3.5

Table 3.5 SPLIT LOCATED CEMENT GRINDING UNITS IN INDIA

(AS ON 31/03/2002)

S.No	Company	Unit	Installed Annual Capacity (000 tonnes)	State
1.	ACC Ltd.	Damodhar Cmt.&Slag	525	W.B.
2.	ACC Ltd.	Tikaria	750	U.P.
3.	Andhra Cement	Vijayawada	240	A.P.
4.	Andhra Cement	Vizag	500	A.P.
5.	Birla Corp.Ltd.	Durgapur	600	W.B.
6.	Birla Corp.Ltd.	Birla Cement Raebareili	360	U.P.
7.	CCI Ltd.	Delhi	500	Delhi
8.	Grasim Industries	Rajashree-Hotgi	1350	Mah.
9.	Grasim Industries	Grasim-Bhatinda	1000	Punjab
10.	Guj.Ambuja Ltd.	Guj.Ambuja Ropar	1340	Punjab
11.	Guj.Ambuja Ltd.	Ambuja Cement (G) Bhatinda	500	Punjab
12.	Guj.Ambuja Ltd.	Ambuja Eastern WB	1000	W.B.
13	Jaypee Cement Ltd	Jaypee-Sadva Khurd	600	U.P.
14.	L&T Group	L&T-JCW	800	Orissa
15.	L&T Group	L&T-ARCW	1000	T.N.
16	L&T Group	Magdalla	700	Gujarat
17	L&T Group	Ratnagiri	400	Mah.
18.	Lafarge India Ltd.	Lafarge-Jojobera	1900	JHK
19.	Mysore Cement	Diamond Cmt.Jhansi	500	U.P.
20.	Orient Paper Ind.	Orient Cement Jalgaon	700	Mah.
21.	UP State Cement	Chunar	1680	U.P.
22.	Others	Indo-Rama Cement	1000	Mah.
	TOTAL		**17945**	

Source : Kamal Kishore, Cement Industry and Indian Railways, Vision 2025, 2002.

Split grinding units, generally, produce blended cement which is cheaper because fly ash or slag, as inputs for its production, are available at little cost from the thermal power plants or the steel plants. This is another factor, which is mitigating against rail movement of cement since the split units are located closer to the market distribution centres.

Movement of Cement in Bulk

Bulk movement of cement is not a new concept as, all over the world outside India, more than 90 per cent of the cement is moved in the form of bulk. In India, however, this movement is less than 2% of the cement produced and dispatched by various means.

It has been estimated that packing of 100 million tonnes of cement in polypropylene bags costs more than 700 crore rupees every year. These bags are bio non degradable and are, thus, not environment friendly.

The movement of cement in bulk will save everyone from this problem. It will also make cement available at cheaper rates to the ultimate consumers.

A beginning has been made in India by designing special wagons for this type of movement and by unloading these at specially designed terminals. A terminal has been developed in Mumbai area on Central Railway. Bulk movement of cement also saves wagon and line capacity for the railways as they do not have to carry the bags along with the cement from one end to the other.

Ready Mixed Concrete (RMC)

This contains cement, sand and aggregate, mixed together, in the desired proportion for specific uses like building of roads, flyovers, etc. RMC can be moved either dry or mixed with water in which case it has a very short life span and must be used for construction work with in the time limit specified. If not used in time, the cement has a tendency to set, making concrete useless for construction purposes.

Wet RMC is moved in specially designed road vehicles which mix water in RMC when on the move towards the its work site. Work areas having road traffic jams and congestion en route, however, do not favour movement of wet RMC. In such cases, it is moved dry and water is mixed at the site to make it ready for use.

RMC has not been able to compete effectively with site-mixed concrete for two reasons.

- Site-mixed concrete is free from taxes and regulations.
- RMC needs movement of cement in bulk. This movement

  has not yet fully developed fully in India.

The total capacity of RMC units in India, in December 2001,was only 2656 cubic metres per hour. The details are given in the Table 3.6.

Table 3.6 RMC UNITS

Company	No. of Units	Capacity (Cubic Metres/Hour)
ACC	10	544
L&T	7	300
Ready Mix Concrete	4	320
Grasim	6	380
Madras	2	112
Others	14	900
Total	46	2656

Source :- Kamal Kishore, Cement Industry & Indian Railway: Vision 2025

Transport Mode Choice Factors

There is a stiff competition within the cement industry at present. The choice of the mode of transport has, therefore, become a very important consideration to keep costs under control. As already stated, freight forms about 15 to 20% of the cost of cement to the customer. The cement plants have, therefore, to choose a mode of transport, which will be economical, in addition to it's being suitable, for the customers. The following mode choices are available:-

1) Roadways,
2) Railways,
3) Waterways including Inland Transport and Coastal Shipping.

For deciding on a particular mode of transport, a cement company will have to consider a number of factors. Before we describe the various factors, it would be necessary to understand the nature of the transport service. The term 'service' forms a part of the term 'product' in marketing management. However, services have certain special characteristics, which pure products do not have.

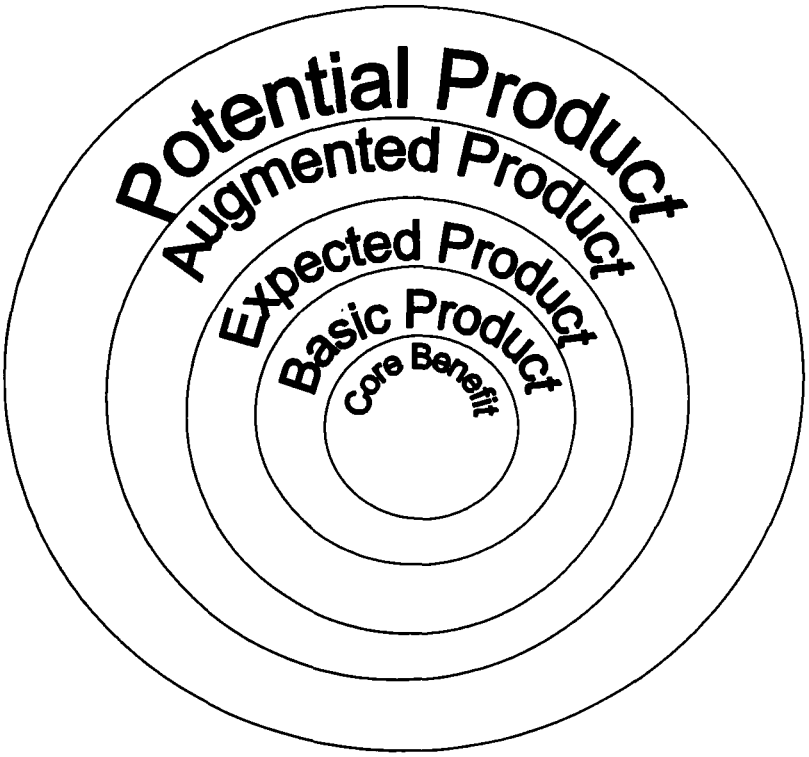
As far as this study is concerned, the transport service includes the transportation of cement from the manufacturer to the customer.

Evolution of the Transport Product

Any product passes through five levels as it evolves (see figure 3.1). The transport product has also evolved in the same way. These levels are:

- Core Benefit
- Basic Product
- Expected Product
- Augmented Product
- Potential Product

Fig. 3.1 Evolution of Transport Product.



We will describe these five- product levels (Kotler 1999) as applicable to the marketing of the transport product. Each level adds more customer value. These levels constitute a product level hierarchy.

Core Benefit

This is the fundamental service that the customer is buying. It would mean just transporting the cement from the place of its manufacture to its destination at the customer's end.

Basic Product

At this second level, the transporter has to convert the core benefit into a basic product. In cement transportation, this would mean providing a covered railway wagon or a road vehicle so that cement does not get damaged by wet enroute.

The parameters constituting the core benefit and the basic product are critical for cement transportation and would have to be provided by any transporter at all times. If an organization providing transport, cannot provide these core and basic products, it will not be able to exist in the transport industry.

Expected Product

This is the third level. The cement transport marketers have to provide a set of attributes and conditions that the buyers would, normally, expect when they decide to purchase any mode of transport.

It should be provided by the transport organization in the, short to medium term, time frame. Most transporters should be able to meet these expectations. For transport of cement, this would mean reasonable freight rates and transit time along with delivery at destination, without damage, to the cement dispatched by the manufacturer.

Augmented Product

This is the fourth level. At this level, the transporter plans to exceed the customer's expectations. The augmented transport product would address some specific needs of transportation for a group of customers.

In the case of cement transportation, this would mean provision of godown space at the destination for further distribution to the individual customers or even arrangements for delivering cement to individual godowns of customers or dealers. The reliability of the service is also, equally, important at this level.

The augmented product has to be provided by the cement transporters in medium to long-term time frame.

Potential Product – For Customer Delight

This is the highest level of the marketing of any product and is designed to provide customer delight. This would make the customer loyal to a particular mode of transport. The present cement transport scenario in India has, not yet, reached this level in any of the modes of transport that are available. Obviously, this level of product can be provided by any transport organisation only in the long term. Provision of such a level of product to the customers will lead to customization.

In cement transportation, this level would provide consignment tracking & real time information to the customers about their consignments, in addition to ease of payment and other procedures for booking and delivery of consignments.

Figure 3.2 Product Levels for Cement Transportation

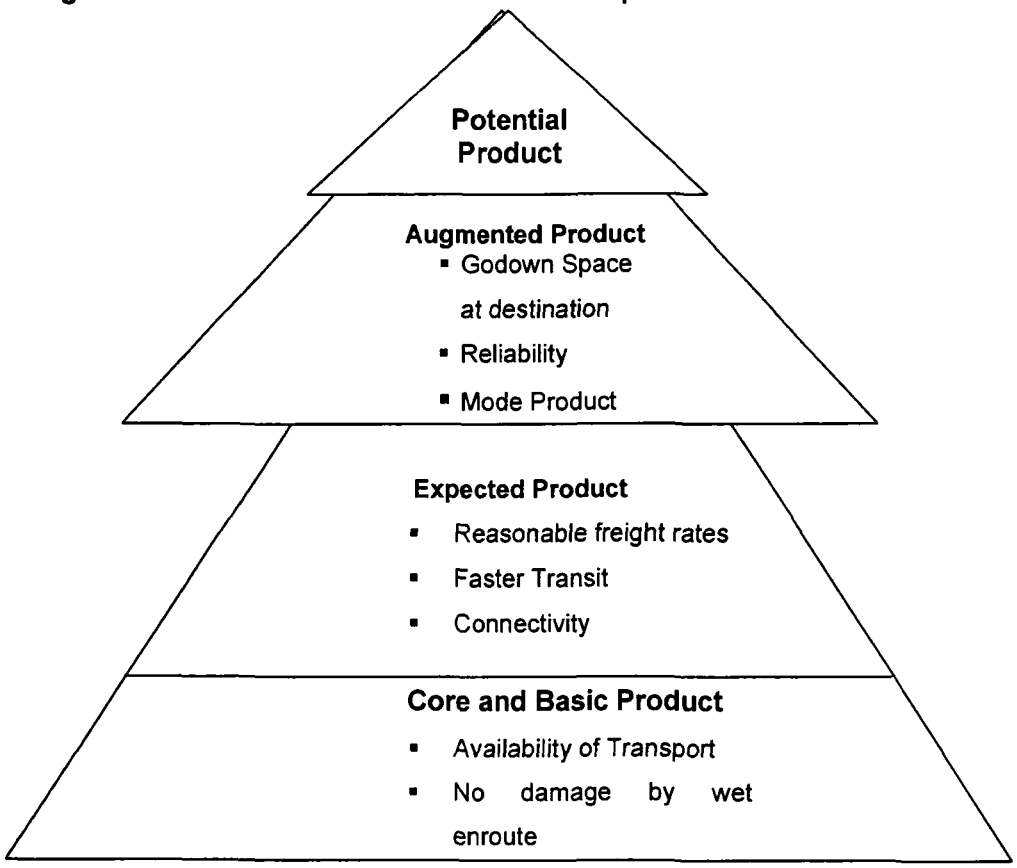
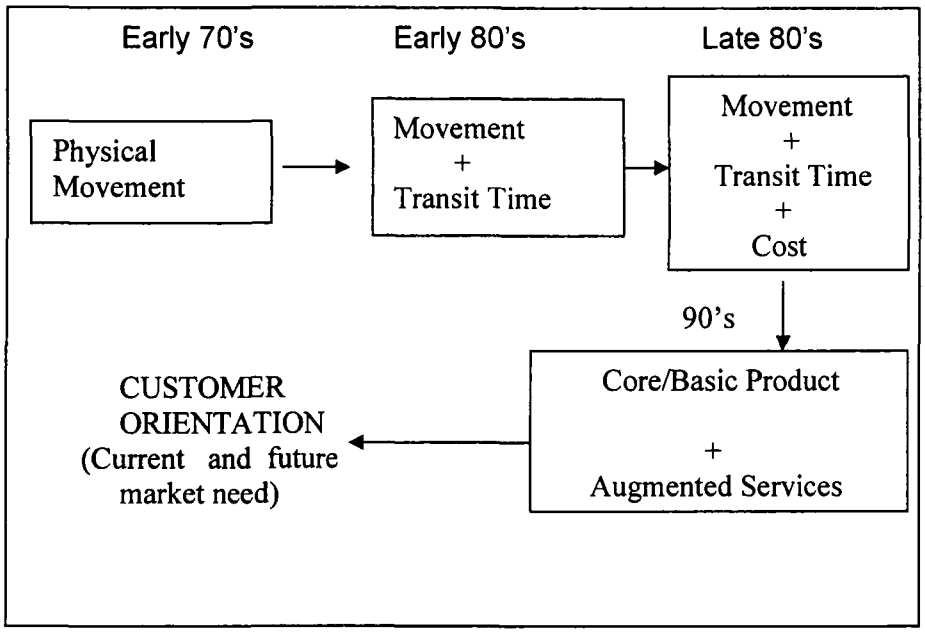


Figure 3.2 gives the product levels for cement transportation. It also shows, at a glance, the parameters, which are important to the customers at various levels of the product.

Evolution of Customer Needs

The evolution of customer needs in the Freight Segment is shown in Fig. 3.3

Fig : 3.3 Evolution of Customer Needs in the Freight Segment



Source :- A F Ferguson Report - 1997

3.9 Key Factors of Transport Service

The transport service consists of a number of constituent factors. Any customer who wants to use this service keeps some or all these factors in view while deciding on the mode of transport.

AF Ferguson, in their report (A.F. Ferguson 1997) have mentioned the following as key factors which constitute the transport service :

- Scheduled Deliveries
- Ease of Availability of Transport – This includes the time taken in making the service available.
- Transit time – to be counted from the time the shipper sends his cargo from his factory till it is unloaded at the destination.
- Cost of Transportation – to include freight, cost of local transportation, cost of loading and unloading including the cost of transhipments,

costs of packaging and other unaccounted for costs incurred at various points.

- Assurance on damages, pilferages and shortages.
- Procedural simplicity from indenting of transport to execution of the demand for the same.
- Connectivity from point to point.
- Information dissemination and tracking of cargo.
- Mode-Product compatibility - includes design of the wagon/road/other vehicle.

It may be stated here that the above parameters have varying degrees of importance for different shippers. Some parameters may be critical for the transport of certain commodities while these may not be so for other commodities for transportation by a particular mode.

Mode Choice Studies in the United Kingdom

Some more studies have been conducted in other countries which identify freight forecasting approaches at different levels of desegregation down to the individual decision making unit (Ian Jones 1997). Most of these studies are based on Consumer Stated Preference (CSP) methods. These studies decide about the most important attributes to be incorporated for the experiments.

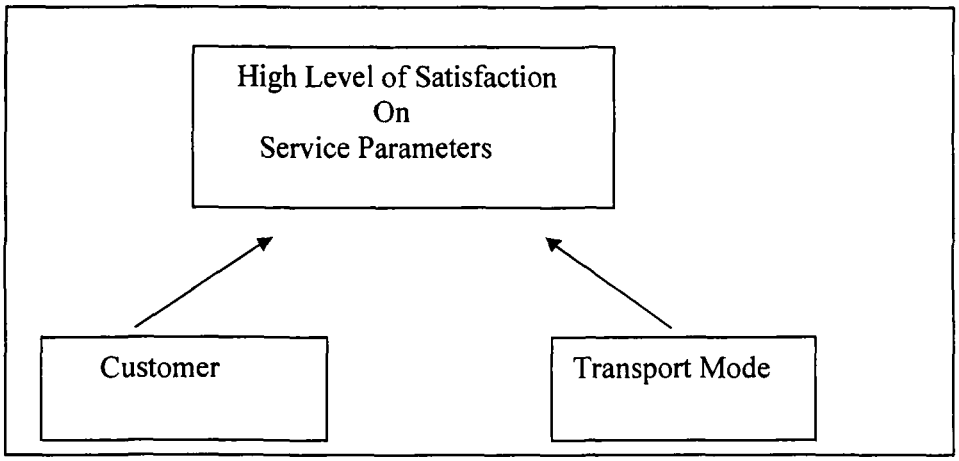
The studies consist of qualitative evidence as well as quantitative evidence. Qualitative investigations, generally, precede the quantitative investigations. The MVA consultancy, in their report (MVA Consultancy 1982), concluded that where choice of mode was available, freight-rates, expressed in term of cost/tonne, greatly influenced the decision process, along with reliability of transport. The transit times, if predictable, were not found to be the critical factors. The study also revealed that responsiveness of transport operators to transport needs was a very important factor. Thus reliability and flexibility have come up as the most important attributes in the mode choice for bulk freight movements (Ian Jones1997).

3.10 Mode Choice Decision

As discussed in the foregoing paragraphs, the transport product has several parameters. A number of these parameters, are applicable to transportation of cement as shown in Figure 3.4.

The decision of a customer to choose a mode would depend on the level of satisfaction that he gets from these service parameters. Thus, the competitiveness of a mode, in a certain segment, will be dependent on its performance in each of the service parameters.

Fig. 3.4 Competitive Advantage of Modes for Cement Transportation



In order to have a sustained competitive advantage, the transporter has to ensure that he provides a high level of satisfaction to the customers on the various service parameters, which are critical to that segment of cement customers. Each segment of these customers will decide the mode of transport based on the performance of the mode on the relevant parameters. The customers can shift from one mode of transport to the other depending on their experience with a particular mode of transport. This shifting between modes is called "Modal Substitutability". Some of the customers may shift the mode due to price reasons while other may do so due to poor fulfillment of expectations on augmented service parameters by a particular mode of transport. The cement transporters have, therefore, to find out the sensitivity of their customer segment to various parameters and modify their service offers to suit the needs of the customers.

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CHAPTER IV
RESEARCH METHODOLOGY

In this chapter, the research methodology used for the present study has been explained. The methodology used was designed to fulfil the objectives of the study, as enumerated in this section.

The data collection procedure explains the universe of the study, the sampling frame, the sampling units, the sample size and the sampling procedure. The type of data used and the sources of data, both primary and secondary, have been explained. The research instruments used, viz. the questionnaires and interviews, have been explained after detailing the sources of data. The analysis of data has been done in Chapter V of the study.

Objectives of the Study

The objectives of the study are :

- To study the existing marketing strategies of the Indian Railways with reference to the transportation of cement.
- To determine and analyse the reasons for the fall in the share of cement traffic moving by rail over the past few years.
- To suggest the marketing strategies needed by the Indian Railways to improve their share in cement transportation.

4.1 Data Collection Procedure

The universe of study consists of all the cement-manufacturing units in the country. There were a total of 489 cement plants in the country as on 31st March 2002. These include 124 large cement plants, having an annual manufacturing capacity of 135.03 million tonnes. There were 365 mini cement plants also in addition to the large cement plants. The mini plants produced a total of four million tonnes in the year 2002 against an installed capacity of 11.10 million tonnes. The large cement plants produced 102.4 million tones in the year 2002 (Kamal Kishore 2002).

Sampling Frame

The mini cement plants produce less than four percent of the cement in the country. The cement thus produced is absorbed or utilised in the areas, which are close to the cement-manufacturing units. The movement of this quantity, of about 4 million tonnes, is only by road and there is little possibility of moving this traffic by rail.

Thus, our sampling frame consists of 124 large cement plants, as on 31st March, 2002. These cement plants transport cement using railways, roadways or waterways as modes of transport.

The sampling unit is a cement plant. It can be any one of the cement units in the sampling frame described above.

Sample Size

The optimum size of the sample has to full fill the requirements of efficiency, representativeness, reliability and flexibility. The system of sampling has also to determine the desired precision as also the acceptable confidence level for the system. The magnitude of population variance also needs to be considered because, if the variance is large, a bigger sample would be required. The parameters of interest in the study have also to be kept in view while deciding the size of the sample.

Keeping the above guidelines in view, a sample size of 20 percent was selected. Thus 29 cement plants were selected out of a total of 124 large cement plants for the collection of data.

Sampling Procedure

Probability sampling method with restricted sampling as the element selection technique has been employed. Area sampling method was used as the cement manufacturing units form a number of geographic clusters in the country. The clusters of cement plants are in the following states:

Andhra Pradesh	21 Plants
Rajasthan	14 Plants
Tamil Nadu	13 Plants
Gujarat	10 Plants
Madhya Pradesh	10 Plants

An effort has been made to get samples from each State having a sizable number of cement manufacturing units located in it. While it was essential to draw samples from these States, the necessity of getting samples from the other States was also kept in mind so that the all India character of the study is maintained. Thus, samples have also been collected from plants situated in West Bengal, Bihar and Orissa to reduce the element of bias.

Data Collection

The data used for this study have quantitative as well as qualitative dimensions. To collect the relevant data, both primary as well as secondary sources have been utilised.

Primary Sources

The sources of primary data are the cement plants, the cement customers and members of the trade and industry.

Secondary Sources

Data from the secondary sources supplement the primary data relating to the manufacture and dispatch of cement by road/rail/waterways.

Secondary data have been collected from the publications of the Cement Manufacturers' Association, the origin-destination analysis done by the LRDSS (Long Range Decision Support System) and Statistical Directorates of the Railway Board. The studies conducted by the Ministry of Railways, either directly or through consultants like Rail India Technical and Economic Services (RITES) and A.F. Ferguson and Co. and other similar studies have also been used as sources of secondary data.

Research Instruments for Collection of Primary Data

The research instruments, used for the collection of primary data, are:

- **Structured Questionnaire**
- **Interviews / Schedules**
- **Seminars**

Structured Questionnaire

This has two types of dimensions; the qualitative and the quantitative dimensions. This was sent to all the large cement plants in the country. The

questionnaire was also given to some of the stockists, agents, liasion officers and Advisers of the cement companies. These included some retired railway officers also who are now working as consultants or Advisers to one or more of the cement companies.

Personal Interviews / Schedules

The structured questionnaire provided the data on qualitative as well as quantitative dimensions for the study. These data were obtained from the cement manufacturing units. It was also necessary to have the views of the marketing officers and transport advisers of some of the cement companies on the various problems faced by them with the existing policies and strategies of the Indian Railways. The views of some of the retired and serving railway officers were also obtained to elicit their reaction to the problems faced by the cement industry, their marketing officers and the transport advisers on the various issues. It was necessary to have an overall view of the problems faced by the cement industry in transporting the cement traffic by rail. The views also highlighted some of the reasons why the cement traffic is getting diverted to other modes of transport.

Seminars

In these seminars, members of the trade, industry, road transporters, marketing managers of the Container Corporation of India, the railway operating and commercial officers, and the road transporters were present. The seminars were held with a view to discuss the existing marketing strategies of the Indian Railways and also to have suggestions for evolving new strategies to improve the share of the Railways in the transport sector.

4.2 Description of Research Instrument

The questionnaire was divided into two parts. The first part dealt with the data on the qualitative dimensions while the second part attempted to deal with the data on quantitative dimensions from the cement manufacturers. There are five questions for obtaining data on qualitative dimensions for cement dispatches. These questions were used to obtain data for the following dimensions :-

- Relative importance of various parameters of the transport mode.
- Comparative attitudes of consumers towards various facets of rail and road
- transport.
- Preference of consumers towards mode of transport and reasons

- Problem areas in rail transport.
- Relative importance and priorities of the measures to improve railway freight services.

The second part of the questionnaire consists of 7 questions which were used to obtain data on quantitative dimensions from the cement plants in the country. These questions relate to the following dimensions:

- Production/dispatches of cement for the period 1990-91 to 2001-02.
- Distribution channels used by the cement companies.
- Classification of customers on the basis of monthly dispatches.
- Relative use of distribution channels for cement dispatches.
- Zonewise pattern of cement dispatches
- Comparison of road and rail dispatches of cement for the period 1991-92 to 2000-01.
- Components of landed price for three important destinations in each zone.

Relative Importance of the Various Parameters of the Transport Mode (Q.1)

This question relates to the importance of seven parameters for the Railway's cement customers on a scale of 1 to 5, based on their importance to them. The lower end of the scale i.e. "1" refers to "least important" while the upper end of the scale i.e. "5" refers to "most important '. In other words, the higher the rating given by a customer to a particular parameter, the higher is its importance to the customer and the parameters are:

i) Faster Transit Time i.e. the time taken by the transport service to reach the cement from the manufacturing point to the destination. The manufacturing end is, generally, one of the cement plants while the destination would depend on the place where the customer wants delivery of the cement. Cement can be despatched by railways to a railhead, which is close to the place where the ultimate consumer of cement would be. If roadways are used, the cement may be sent to a place where one of the following is situated

   a) Company owned Stock/Dump Yard
   b) Dealer
   c) The customer or the ultimate consumer of cement.

ii) Shipment Tracking - This means that the customer should be able to find out the whereabouts of his cement consignment after it has been dispatched from the manufacturer's premises by any mode of transport.

He should have information about the date and the time, when the consignment is going to reach him after it has been dispatched. In case, there is any delay or hold up enroute, he should know the reasons for the same along with the likely duration of the delay.

iii) Loss/Damage Enroute – This refers to the loss as well as damage that can take place during the course of transportation of cement from the originating point to the destination. Loss can take place either due to theft or due to multiple handling of cement consignments, which are bagged, at the manufacturer's premises in 50 kilograms jute or polypropylene bags. During handling, the labourers use hooks to shift the bags from the truck or the wagon to the cement godown. This results in some loss of cement every time a cement bag gets handled.

Damage enroute refers to the damage to cement during its transit. This can happen due to rain or wet if the wagon or vehicle, in which it is being carried, is leaking or if the cement bags are not properly protected by tarpaulins. Cement is hygroscopic in nature and sets quickly after it absorbs water. If it sets, it becomes useless for construction purposes and results in a net loss equal to of the quantity that has set. Loss and damage enroute have been combined in the same category as the customer gets less cement at the destination than what was dispatched for him from the loading point.

iv) Wide Reach - This term refers to the number of points, which are served by a transporter in a particular area. It also refers to the number of marketing centres of any marketer even if these are situated over a very large area. For example, the Railways have a very wide reach as they handle the freight traffic at a number of terminals, which are situated close to one another. Similarly, the roadways may have a wide reach in a particular area as they can move the road vehicles carrying cement, to the individual godowns of company stockyards or to the dealers. Thus each customer would judge the reach of a particular mode of transport depending on how well that particular mode serves his area of interest.

v) Claims Settlement - If the consignment of cement suffers some loss or damage enroute, the customer lodges a claim against the transport service provider to get compensated for the loss. The process of settlement of claims takes some time. However, in the case of railways, the time taken

is longer because of the procedure laid down for the verification and payment of claims. The claims settlement procedure by the road transporters is faster as they are, mostly, private organisations having more flexibility and take less time to settle the claims. Such claims against road transportation are not to be paid out of public money as in the case of the railways.

vi) Reliability-This term refers to the confidence that the customer has in the various modes of transport available to him. This would include the following services by the transporter.

- *Timely supply of transport* – This term refers to the supply of a road vehicle or a wagon in the case of railways or a water vessel in the case of waterways. In fact, a customer would like to have the availability of transport at a short notice.
- *Dependability* means that the customer should be able to plan a delivery schedule for the cement dispatched from the cement plant to its destination station with a fair degree of accuracy. This will also help the dealer or the stockist to plan for the minimum inventory level required to avoid stock outs.

vii) Flexibility - For cement transportation, the term flexibility refers to :

- Flexibility in dispatching cement to a large customer base located at different points. Sometimes, due to exigencies of the situation, the cement marketer may like to change the priority of dispatch to different destinations. The transport service is flexible if it permits this change to the required extent.
- Flexibility in dispatching only the desired quantity to a customer or a group of customers located at a destination. To the extent, the transport system does not allow this variation in quantity; it restricts the flexibility of the cement marketer.

Comparative Attitudes of Consumers towards various facets of Rail and Road Transport (Q.2)

The second question relates to the comparison of the modes of transport i.e. rail and road on the seven parameters as given in the first question. The purpose of this question is to find out the relative ranking of these parameters by the cement companies with regard to the two major modes of cement transport. Respondents were asked to rate these parameters, in respect of two mode of

transport, on a five point scale ranging from 1 to 5. 1 refers to least reliable and 5 indicates most reliable. In this question, an additional parameter on "Freight Charges" has been added for comparison between rail and road transport. Freight Charge is the price of transporting cement from the manufacturers' premises up to the godown of the dealer/stockist. This term includes handling and transhipment charges for cement traffic at the originating, terminating points and also at locations enroute.

Preferences of Consumers Towards Mode of Transport and Reasons (Q.3)

The third question deals with the preference of the respondent between roadways and railways if both the modes have the same freight charges for the same destination. The respondent is also expected to give reasons for preferring a particular mode of transport over the other.

Problem Areas in Rail Transport (Q.4)

The cement plants have been finding a number of areas of railway working as problematic in cement transportation. The problematic areas have been listed below:

- Taking allotments of indents/wagons on a day-to-day basis
- Flexibility in changing destinations and products.
- Not getting the right kind of wagons when required.
- No knowledge of consignments after dispatch.
- Marking wagons as sick after loading by the customer
- Wrong interpretation of rules for charging freight, so as to deny the benefit of 'Train Load' freight to the respondent.

The above six areas are to be rated on a scale of 1 to 5. A score of 1 of the scale is the 'least problematic' while a score of 5 would mean 'highly problematic' for the cement company / the respondent in question.

Relative Importance and Priorities of the Measures to Improve the Rail Freight Services (Q.5)

This question gives a list of eight different marketing strategies, which can be taken up by the Railways to improve their services to their customers. The respondents have been requested to give their views, separately, on the importance as well as priority, of the eight suggested strategies for the Indian Railways. The views have to be given on a five-point scale from 1 (Least Important) to 5 (Most Important). The suggested strategies are:

- Reduction in freight charges.

- Reduction in minimum quantity for dispatch.
- More number of two and three point combinations.
- Prompt claims settlement.
- Simplification of rules.
- Designing of special wagons.
- Reduction of special wagons.
- Any other (Please specify).

Quantitative Dimensions

The second part of the questionnaire was designed to collect quantitative dimensions of data on cement dispatches. The respondents are the cement manufacturers in various parts of the country. This questionnaire has seven questions. A discussion on each question follows.

Production/Dispatches of Cement and its Comparison with the Rail/Road Dispatches for Each Plant (Q.1)

The respondents were requested to give data for production and dispatches of cement for the period from 1990-91 to 2001-02. The figures of dispatches include the cement dispatched from the concerned cement plant by all modes of transport.

Distribution Channels used by the Cement Companies (Q.2)

This question deals with the type of distribution channels used by the respondents. The types of channels are :

- Company owned Stock/Dump Yards
- Dealerships
- Direct Sale to Customers
- Any other channel (to be specified by the respondent)

Classification of Customers on the Basis of Monthly Dispatches (Q.3)

The respondents were asked to give preferred mode of dispatch of cement for various groups of customers. These groups were formed on the basis of the tonnage lifted per month by each customer from a particular cement plant (Respondent). The groups were:

- Less Than 200 Tonnes/Month
- 200-500 "
- 500-1000 "
- 1000-1500 "
- 1500-3000 "

- 3000- Above.

Relative use of Distribution Channels for Total Cement Dispatches (Q.4) In this question, the respondents were requested to give yearwise dispatches to each of their distribution channels for the past ten years.

Zonewise Pattern of Cement Dispatches (Q.5)

The respondents were asked to give yearwise dispatches for the past ten years for each of the zones. The zones were classified, direction wise, into four directions namely North, South, West and East zones. The replies to this question give us the directionwise / zonewise dispatches for each respondent cement manufacturing plant.

Production/Dispatches of Cement and its Comparison with the Rail/Road Dispatches for Each Plant (Q.6)

In a reply to this question, the respondents were asked to give a break up of their yearwise dispatches by road and rail for the last ten years. This would help in knowing the trend of increase/decrease in dispatches by a cement manufacturer by a particular mode of transport.

Components of Landed Price for Three Important Destinations in Each Zone (Q.7)

In this question, the respondents were asked to give a break up of their landed price of transporting cement to three of their most important destinations in each zone both by road and by rail. The details would show the comparative economics of the transport of cement for important destinations. An analysis of the details led us to the areas where the railways are at a disadvantage as compared to the roadways. The components of the landed price, are :

- Freight.
- Handling charges at Destination.
- Demurrage and Shunting charges.
- Transhipment Charges.
- Secondary freight i.e. freight charges incurred for moving cement from the destination station to the dealer's/stockist's premises.

4.3 Secondary Data Collection

Sources

Secondary data has been collected from a number of sources. These include:

- Publications of Ministry of Railways (Railway Board) regarding data on Railways and their share in the transportation of cement over the years.
- Publications of the Cement Manufacturers' Association.

- Articles and Papers on relevant topics published in management journals and magazines.
- Books on Marketing, Services Marketing, Strategic Management, Cement Industry, Research Methodology and Statistics for Management.
- Reports on Railways published by RITES and other consultants appointed by Railways.
- Reports of Committees appointed by the Central Government and the Ministry of Railways for studying the working and management of the Indian Railways.
- Proceedings of seminars and discussions held at various fora on the issues of transportation of cement by the cement industry.
- Research work of scholars on the transportation of similar commodities by Rail.

A detailed list of the secondary sources is given in the bibliography.

4.4 Data Analysis Procedure

Qualitative Dimensions

Relative Importance of Various Parameters of the Transport Role (Q.1)

The ratings given by each respondent for each of the seven parameters in response to Question 1 were added and their arithmetic mean was worked out to get the mean rating of each parameter. This gave the rating of the parameter. The higher the rating, greater is the importance of that parameter for the respondent cement-manufacturing unit. The seven parameters were thus ranked in order of importance.

Comparative Attitudes of Consumers Towards Various Facets of Rail and Road Transport (Q.2)

The data, obtained from Question 2, gave the relative importance of rail and road for each of the parameters given in Question 1. Another comparative parameter is the "Freight Charge" between rail and road. In this question also, mean ratings for each parameter for rail and road were worked out.

The importance of each of the parameters, multiplied by the rating of each mode of transport, gave the comparative ranking of the two modes of transport in the eyes of the respondents for each parameter. The Railways can, therefore, not only come to know the parameters in which they are lagging behind the roadways but also they can know the extent to which they lag in each parameter. The priority of the cement marketers was also available as a result of the above

analysis. The existing strategies of the Railways for each of the parameters, with the rating that they have got from the respondents as a result of pursuing the present strategies were compared. Where the rankings for the Railways are lesser than the same for the roadways, they may need to review the strategies to improve their market share in cement transportation.

Preferences of Consumers Towards Mode of Transport and Reasons (Q.3)

Even if the freight charges are the same for railways and roadways, a number of respondents would like to transport their cement by road. The percentage of such respondents was worked out. The reasons given by them for preferring roadways over railways were also listed. These reasons were correlated to the rankings for the seven parameters obtained from an analysis of data from Questions1 and 2. The correlation was done to see the extent of dissatisfaction of the respondents with the service provided by the Railways.

Problem Areas in Rail Transport (Q.4)

This question gives six areas of railway working in which the respondents face difficulties on a day-to-day basis. These areas are of great concern to them. The respondents were asked to rate each area on a scale of 1 to 5. The responses show the areas that, the customers think, are the most difficult areas, in dealing with the Railways. The mean score of the respondents, for each area, was worked out. The results were tabulated and were also plotted on a bar chart. The Railways will, therefore, need to review their rules and procedures in the most problematic areas.

Relative Importance and Priorities of Measures to Improve the Railway Freight Services (Q.5)

This question gives a list of seven strategies, which can be adopted by the Railways to improve their service to the customers. The respondents' replies to the question cover two aspects of each strategy i.e. its importance as well as its priority. The scores were tabulated and then plotted on a bar chart for the two ratings.

Quantitative Dimensions

Production / Dispatches of Cement for the Period 1990-91 to 2001-02 (Q.1)

This gives the data of production and dispatch of cement, by each respondent, for the period of from 1990-91 to 2001-2002. The data were analysed were follows: -

a) To see the trend of production and dispatch of cement, over the period in question, for each respondent.

b) The percentage growth of dispatch of cement was worked out for each respondent taking 1990-91 as the base year.

c) The average growth rate of cement dispatches was worked out. This gives the trend of growth rate of cement transportation for the period 1990-91 to 2001-02.

d) The trend of growth of cement dispatches by rail was compared with the same for road dispatches.

Distribution Channels Used by the Cement Companies (Q.2)

The data provided details on how many of the respondents had more than one or more than two distribution channels. An analysis gave the number of respondents distributing through company owned stock/dump yards or directly to customers.

Classification of Customers on the Basis of Monthly Dispatches (Q.3)

The data obtained from the respondents were analysed to show the minimum off-take of cement (in tonnes per month) at which the Railways become the preferred mode of dispatch. The analysis helped us in identifying the target group of customers of the cement manufacturers who preferred railways as the mode of dispatch.

Relative use of Distribution Channels for Cement Dispatches (Q.4)

A break up of the type of distribution channels used by the individual respondents over the period of twelve years showed if there has been any marked change in the proportion of cement dispatches through various channels with the increase in total dispatches over the years.

Zonewise Pattern of Cement Dispatches (Q.5)

The replies to this question gave the zone-wise/direction-wise dispatches of cement for each respondent. The data were used to identify the cement plants, which dispatch cement over long leads. In other words, whether, the railway is the preferred mode of dispatch even over long leads.

Comparison of Road and Rail Dispatches of Cement for the Period 1991-92 to 2000-2001 (Q.6)

This data give the dispatches by rail and road for each respondent for the period from 1990-91 to 2001-02. The trend of increase or decrease in road/rail share of each respondent over this period was thus available. The respondents,

who had switched over from rail to road over the years, were identified. The data also gave us the respondents who are dispatching all their cement by road and do not like to dispatch any cement by rail.

Components of Landed Price for Three Important Destinations in Each Zone (Q.7)

The replies to this question gave the data on the comparative price of transport by road and rail for the three most important destinations of each respondent in each zone of dispatch. The analysis identified locations where rail transport is costlier and the extent to which it is so. The components of landed price, which make rail a costlier option for each such destination, were identified.

4.5 Limitations of the Study

The study has been confined to the collection and analysis of data available from the cement manufacturers for a period of twelve years only. Data of mode share of cement transportation were also not easily available with the cement manufactures for the period prior to 1990-91. Some cement plants have recently come up. These plants supplied data only for the period starting from the year of commenced of their dispatches. They did not have data even for ten years as they were not yet ten years old.

Another limitation of the study is its scope which is confined only to the transportation of cement. The findings of the study will lead to the suggestions of marketing strategies for the Indian Railways. These strategies may not be fully applicable to the transportation of other commodities like steel, petroleum, coal, food grains, fertilizers etc. by the Railways. The suggested strategies may, therefore, not be fully implemented as the Railways follow uniform rules and procedures for transporting the various commodities offered for transportation.

The Railways are a bureaucratic organization. They are a Government Department also. The feedback from the customers suggests that certain organisational changes may be necessary to make the organisation more customers friendly. Making any changes in the organisational set up, it requires an in-depth analysis. This study has not attempted to go into this area, as it would need to be studied, separately, in detail.

References :

Kamal Kishore, 2002, *Cement Industry and Indian Railways: Vision 2025*, (Satna, Madhya Pradesh Cement Manufacturers' Association), 5

Chapter V

ANALYSIS OF DATA AND FINDINGS

The data have been collected from primary as well as secondary sources. These have been analysed and the findings from the analysis have been given at the end of the analysis for each question.

The primary sources of data are :-

i) The replies to the questionnaire, as collected from the various cement plants in the country.

ii) Interviews with the executives of the cement industry, the Cement Manufacturers' Association, the transport advisers to the cement companies and the officers in the Ministry of Railways.

iii) Seminars/Meetings conducted by the Railways and the cement industry regarding the transportation of cement traffic.

The secondary sources of data are as follows :-

i) Publications by the Cement Manufacturers' Association.

ii) Studies conducted by the Ministry of Railways directly or through consultants on the movement of freight traffic.

iii) Other similar studies in the field of rail transportation.

The perceptual/attitudinal data collected from the cement plants have been analysed. The questionnaire was sent to more than 100 cement plants in the country. 29 cement plants responded to the questionnaire. The data were collected for each question in the questionnaire. These have been tabulated for each respondent. The respondents have given the scores for each question on a scale of 1 to 5 in Part I of the questionnaire. The mean score for each question has been calculated for the purpose of analysis. Bar charts have also been prepared, wherever feasible, as a help to analyse the data. The analysis has been used to arrive at the findings for each question in the questionnaire.

There are seven questions in Part II of the questionnaire. The data have been tabulated, question wise, and have been analysed to arrive at the findings from the replies given by the respondents for each question. The analysis and the findings of each question have been given. These follow the tabulation of the data for each question.

The data on qualitative dimensions, obtained from the interviews/seminars/meetings, have been analysed to give the findings from each of these.

The conclusions, based on the findings, of all the above sources have been given at the beginning of Chapter VI. The findings have been divided into seven groups i.e. Freight Charges, Flexibility, Transit Time, Reliability including Loss/Damage Enroute, Settlement of Claims, Customer Satisfaction & Wide Reach.

5.1 A Profile of the Cement Plants

1. Gujarat Sidhee Cement Ltd., Sutrapada, Veraval, Gujarat

   This plant is one of the two owned by the Mehta Group. They produced 5.4 lakh tonnes of cement in the year 2002-03 out of which 4.97 lakh tonnes was ordinary portland cement. They despatched 5.35 lakh tonnes of cement during this year and had closing stocks of 6.89 lakh tonnes at the end of the year. They also produced clinker to the extent of 10.67 lakh tonnes during this year. They did not despatch any cement by rail during the year. They have an installed capacity of 1.2 million tonnes per annum.

2. Century Cement, Baikunth (Tilda), Chattisgarh

   They had an installed capacity of 1.2 million tonnes in the year 2002-03. They produced 1.56 million tonnes and despatched 1.57 million tonnes of cement during this year. They dispatched about 74% of that cement by rail and 26% by road.

3. Madras Cements Ltd., Jayantipuram, Krishna District, Andhra Pradesh

   They have an installed capacity of 1.6 million tonnes. They produced 7.5 lakh tonnes of cement and 5 lakh tonnes of clinker during the year 2002-03. They dispatched 7.53 lakh tonnes of cement during this year out of which only five (5) percent was dispatched by rail.

4. Sri Vishnu Cement Limited, Sitapuram, Andhra Pradesh

   They are owned by Zuari Cement Ltd. and have an installed capacity of 1.2 million tonnes per annum. They produced 6.84 lakh tonnes of cement and despatched 6.88 lakh tonnes of the same during 2002-03. In addition, they produced 6.6 lakh tonnes of clinker during this year. They dispatched only 28,000 (Twenty Eight thousand) tonnes of cement by rail in this year.

5. Mangalam Cement Morak, Rajasthan

This plant has an installed capacity of 1.4 million tonnes per annum. It produced 1.41 million tonnes of cement and 1.36 million tonnes of clinker in the year 2002-03. Cement dispatches were of the order of 1.41 million tonnes during the year.

6. A.C.C., Lakheri (Rajasthan)

This plant has a capacity of 6 lakh tonnes per annum. It produced 6.85 lakh tonnes of cement in 2002-03. In additon, it produced 5.14 lakh tonnes of clinker during this period. Cement dispatches, during the year, were 6.85 lakh tonnes. 89 percent of these dispatches were made by rail.

7. Ambuja Cement Eastern Ltd., Raipur, Chattisgarh

This plant has an installed capacity of 1.2 million tonnes per annum. However, the production of cement, during 2002-03, was 0.8 million tonnes while the dispatches were 0.81 million tonnes. This plant dispatched about 62 percent of its production by rail.

8. ACC Tikaria Cement Grinding Unit (U.P)

This plant is a new cement grinding unit having a capacity of 6 lakh tonnes per annum. It produced 0.88 million tonnes of cement in the year 2002-03. There were no rail despatches of cement during the year.

9. Shree Digvijay Cement Co. Ltd., Digvijaygram, Sikka, Gujarat.

This plant is owned by Grasim Industries and has an installed capacity of 1 million tonnes per annum. It produced 8.2 lakh tonnes of cement and 11.35 lakh tonnes of clinker in the year 2002-03. The cement dispatches were of the order of 8.17 lakh tonnes during this year. Their rail despatches were only 6 percent of the total cement dispatched in 2002-03.

10. Gujarat Cement Works, Pipavav, L&T Rajula

Owned by the L&T Group, they have an installed capacity of 5 million tonnes and despatch cement by road and sea only. There were no despatches by rail upto the year 2002-03. However, with the commissioning of the railway siding in Pipavav port, they have started moving some quantity by rail. In the year 2002-03, they produced 3.3 million tonnes of cement and 4.3 million tonnes of clinker. Their cement dispatches were of the order of 3.33 million tonnes during this year.

11. Saurashtra Cement, Ranavav, Gujarat

They are a unit owned by Mehta Group with an installed capacity of 1.2 million tonnes per annum for cement. They produced 7.56 lakh tonnes of cement in the year 2002-03 and despatched 7.59 lakh tonnes during this period. They dispatch cement by rail, road and sea. Their cement dispatches by rail amounted to about 8400 tonnes in 2002-03.

12. OCL India Limited, Rajgangpur, Orissa

They have an installed capacity of one million tonnes. During the year 2002-03, they produced 1.15 million tonnes of cement and despatched 1.14 million tonnes. They dispatched 33 per cent of their cement by rail during the year. The rail co-efficient, of their dispatches, improved to 44.6 percent in the year 2003-04, upto January 2004.

13. ACC, Chitpur, Kolkata, West Bengal

They are receiving cement at Chipur in Kolkata. They furnished data only on the qualitative aspects of the questionnaire.

14. Tata Chemicals Ltd., Mithapur

This cement plant has an installed capacity of 6.5 lakh tonnes of cement per year. However, their production has remained at the level of 3.4 lakh tonnes during past two years. They have been, gradually, reducing despatches by rail. All their production in 2001-02 has moved by road. This plant has been closed since 2002-03.

15. The India Cements Limited, Talaiyuthur, Sankarnagar, Tamil Nadu

This unit is owned by the India Cements Ltd. and has an installed capacity of 1.5 million tonnes per annum. They produced 1.35 million tonnes of cement and dispatched 1.34 million tonnes during the year 2002-03. They dispatched 16 percent of their cement production by rail during this year.

16. West Bengal Cement Works, Durgapur, West Bengal

This plant is owned by L&T and is having an installed capacity of 1 million tonnes per annum. It is a grinding unit which gets clinker from its mother unit. The unit has been commissioned only in January 2002. In the year 2002-03, they manufactured 7 lakh tonnes of cement and despatched the same quantity. They moved only 6 per cent cement by rail in 2002-03. However, the rail co-efficient improved to 37 per cent upto January 2004.

17. Ariyalur Cement Factory, Ariyalur, Tamil Nadu

This factory is owned by Tamil Nadu Cement and has an installed capacity of 5 lakh tonnes per annum. This factory produced 5.41 lakh tonnes of cement in the year 2002-03 and despatched 5.4 lakh tonnes during the same period. The rail despatches from this factory were only 2100 tonnes in 2002-03. The rail share is likely to improve to 16000 tonnes in the year 2003-04.

18. Madras Cements Limited, Alathiyur, Tamil Nadu

This plant was started in 1997-98 and has an installed capacity of two million tonnes per annum. It produced 1.7 million tonnes of cement in 2002-03 and despatched the same quantity in that year. The rail despatches were only 22000 tonnes during the whole year. It is estimated that the rail despatches will improve to 1.20 lakh tonnes in 2003-04.

19. Birla Super Bulk Terminal, Doddaballapur, Bangalore

This terminal is operated by Grasim Industries for handling 6 lakh tonnes of cement per annum. They are moving all the cement within a radius of about fifty kilometers by road. So there is no rail movement. In the year 2001-02, they despatched 5.13 lakh tonnes of cement from the terminal.

20. Mysore Cements Limited, Ammasandra, Tumkur, Karnataka

They have an installed capacity of 5.7 lakh million tonnes per annum. However, the actual production of cement in 2002-03 was 3.67 lakh tonnes and the despatches of cement totalled 3.65 lakh tonnes in the year. They despatched all their cement by road in the year 2002-03 and also upto January 2004 in the year 2003-04.

21. Sindri Cement Works, Sindri Distt, Dhanbad, Jharkhand

Their installed capacity is 6 lakh tonnes per annum. They produced 7 lakh tonnes cement in 2002-03 and despatched 7.12 lakh tonnes during the same period. This unit is owned by ACC and has despatched about 80 per cent of its production by rail in 2002-03. During the year 2003-04, a similar trend has continued.

22. Durgapur Cement Works, Durgapur, West Bengal

This is a grinding unit having a capacity to produce 6 lakh tonnes of cement per annum. This unit is owned by Birla Corporation Limited. It produced 7 lakh tonnes of cement in the year 2002-03 and despatched

7.12 lakh tonnes during the same period. 56 per cent of the cement produced by them in this year was despatched by rail.

23. Maihar Cement, Sarla Nagar, Maihar, Distt. Satna (Madhya Pradesh)

They are a unit of Century Textiles, located near Satna in Madhya Pradesh, having an installed capacity of 2 million tonnes per annum. They produced 2.55 million tonnes of cement in the year 2002-03 and despatched the same quantity during this year. Seventy seven per cent of their cement was despatched by rail in 2002-03. This trend of despatch has continued in the next year also.

24. Vikram Cement, Neemuch, Madhya Pradesh

They are owned by Grasim Industries and have an installed capacity of 3 million tonnes per annum. They produced 2.61 milllion tonnes of cement in 2002-03 and despatched 2.60 million tonnes of the same in that year. The rail despatches formed 48 per cent of their total despatches by road and rail in 2002-03.

25. Zuari Cement Limited, Yerraguntla, Distt. Cuddapah, Andhra Pradesh

They have an installed capacity of 2.2 million tonnes per annum. During the year 2002-03, they produced 1.56 million tonnes of cement and despatched 1.58 million tonnes by rail and road together. The rail co-efficient, in this year, was 36.8 per cent.

26. Ambuja Eastern, Bhatapara, Chattisgarh

Owned by Gujarat Ambuja, they have a cement plant at Bhatapara in Chattisgarh. The installed capacity is 1.8 million tonnes per annum. They produced 5.36 lakh tonnes of cement in the year 2002-03 and dispatched 5.23 lakh tonnes in this period. Their cement production has come down since 2001-02 as clinker manufactured at Bhatapara is being sent to their Sankrail cement grinding unit in West Bengal. This unit is located closer to the consumption centres. In the year 2002-03, they dispatched 63 per cent of the cement produced by rail.

27. Birla Cement Works and Chittor Cement Works, Chittor, Rajasthan

Both these units are owned by Birla Corporation Limited and have a combined installed capacity to produce 2 million tonnes of cement per annum. They produced 2.02 million tonnes of cement in the year 2002-03 and despatched the same quantity in that year. They despatched about 21 per cent of the cement by rail in the year 2002-03.

28. Binani Cement Ltd., Binanigram, Rajasthan

They have an installed capacity of 2 million tonnes per annum. They produced 2.11 million tonnes and dispatched also 2.11 million tonnes of cement in the year 2002-03. Their rail co-efficient during the period was only 5 per cent.

29. Mancherial Cement Works, Mancherial, Adilabad, Andhra Pradesh

This unit is owned by A.C.C. Limited. It has an installed capacity of 3.35 lakh tonnes per year. They produced and despatched 2.6 lakh tonnes of cement in the year 2002-03. Their rail dispatches were only 7.5 per cent of their total despatches in this year.

5.2 Analysis of Qualitative Dimensions

Important Parameters in Cement Transportation (Q.1)

The data received from 29 respondents is shown in the Table enclosed as Annexure 3.

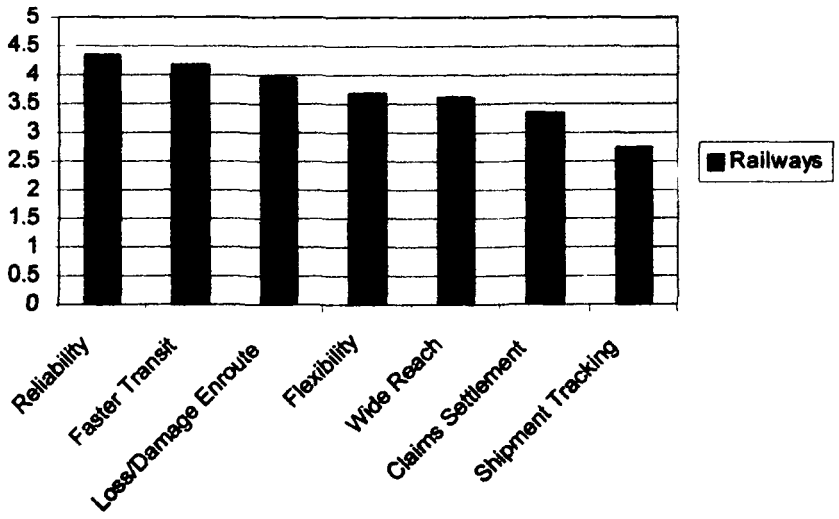
The mean ratings and rankings of the seven parameters are tabulated in the Table 5.1.

Table 5.1 Railway and Ranking of Parameters

	Parameter	**Mean Rating & Ranking**
1.	Reliability	4.3
2.	Faster Transit	4.2
3.	Loss/Damage Enroute	4.0
4.	Flexibility	3.6
5.	Wide Reach	3.6
6.	Claims Settlement	3.4
7.	Shipment Tracking	2.7

These parameters have been plotted on a bar chart in figure 5.1.

Fig. 5.1



Importance of Parameters in Cement Transportation

From the above analysis of data in Table 5.1, we find that:

a) Reliability, followed by faster transit, with least loss/damage enroute are the most important parameters for cement transportation as their mean rating of importance is four for loss/damage enroute and greater than four for reliability and faster transit.

   Any given mode of transport will, therefore, have to provide these transportation parameters to its customers so as to, fully, satisfy their expectations on these.

b) Flexibility, wide reach and settlement of claims have a mean rating of more than three on a scale of 1 to 5. In other words, these parameters are also highly important for cement transportation.

c) Shipment Tracking gets a mean rating of 2.7, which is less than 3. Apparently, the cement manufacturers, or their customers, have not had any major problems in tracking their shipment by any of the means of transport including railways.

Comparative Attitudes of Consumers Towards Various Parameters of Rail and Road Transport (Q.2)

The replies to this question give us a comparison of Rail and Road transportation, on a scale of 1 to 5, for the seven parameters given in Question 1.

In addition, we have the comparison of another very important parameter i.e. the freight charges.

Annexure 4, gives the comparative details of the eight parameters on a scale of 1 to 5.

Out of the 29 respondents, respondent No. 10 (L&T Rajula) did not fill up any replies to this question. So the total number of respondents for this question has been taken as 28. M/s Birla Corporation, Durgapur (Respondent No. 22) did not fill up any rating under the head "Reach". For calculating this rating, the base number has, therefore, been taken as 27.

The ratings on each of the eight parameters, namely:

- Reliability
- Speed (Faster Transit)
- Flexibility
- Freight charges
- Damage/Loss enroute
- Information availability
- Reach
- Claims Settlement

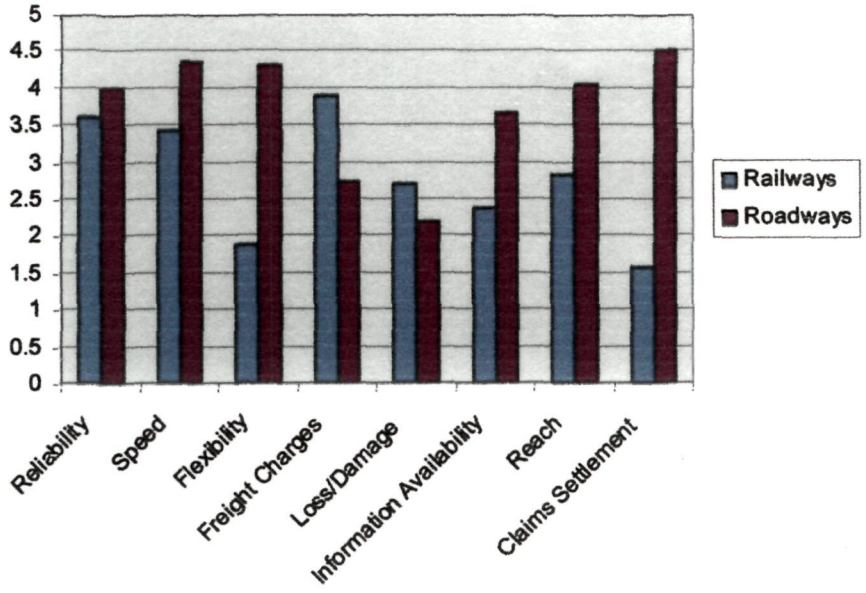
were added and the total was divided by the number of respondents, for rail and road, separately, to get the mean ratings. The comparative mean ratings are given in Table 5.2 below.

Table 5.2 Comparative Ratings for Railways & Roadways.

S.No.	Parameter	Railways	Roadways
1.	Reliability	3.6	4.0
2.	Speed	3.4	4.3
3.	Flexibility	1.8	4.3
4.	Freight Charges	3.9	2.70
5.	Loss/Damage	2.7	2.2
6.	Information Availability	2.3	3.7
7.	Reach	2.7	4.0
8.	Claims Settlement	1.6	4.5

These ratings have been plotted on a bar chart in Fig 5.2.

Fig. 5.2



Based on the data analysis, the findings for each of the eight parameters has been discussed here.

Reliability

On a scale of 1 to 5, a score of 1 represents "Highly Unreliable" while a score of 5 means "Highly Reliable". Thus, if the score is higher, the reliability of that mode of transport is higher than the other one.

The mean ratings, of the two transport modes are :

Railways	3.6
Roadways	4.0

The roadways have been adjudged as more reliable than the railways though reliability rating of rail transport also is considered as good.

Speed/Faster Transit Time

The respondents' views were rated on a five points scale from 1 to 5. A rating of 1, represents "very slow" transit, while a rating of 5 represents "very fast" transit. For the railways, the average rating comes to 3.40 as against 4.30 for roadways.

The above ratings show that the cement companies feel that the cement will reach their users faster if moved by road.

Flexibility

This term refers to the flexibility in the rules, as applied by the transporters to the customers, in different situations. Flexibility may be required by the customer for change in the destination of the demand placed with the Railways or for booking to a destination, which the Railways are not permitting due to their operational constraints. The respondent may require flexibility in the quantity to be dispatched to a particular customer or a particular destination. Further, in the case of railways, it involves payment of a higher freight rate by the consignor if the minimum tonnage, for a train load, is not offered for a destination.

The flexibility ratings have been measured on a scale of 1 to 5. A score of 1 means that the transportation system is very rigid and permits little flexibility. A score of 5 would mean a high level of flexibility offered by the transporters to the respondents.

The respondents have given a mean rating of 1.80 for the railways and 4.30 for the roadways. This means that, in their perception, the railways' system of transportation, is rigid. On the other hand, roadways, with a mean score of 4.30, are rated as a very flexible system of transportation for the cement industry.

Freight Charges

This term has different connotations for the railways and roadways. For movement by railways, it means the charges for transportation of cement from the originating station to the destination station. However, for roadways, this means the total transportation charges from the cement plant to the dealer's/stockyard premises. In other words, the cost of handling the cement from the cement plant to the loading station and the cost of handling and transportation from destination station to the dealer's/stockist's godown has to be added to the railway freight to compare the two. Thus, the landed price of transportation of cement, upto the dealer's/stockist's godown has to be considered for comparing the freight rates.

A five-point scale has been used for rating the two modes. A score of 1 on the scale means very "low" freight charges while, a score of 5 on this scale means "very high" freight charges.

The respondents have given a mean rating of 3.9 for rail transport and a mean rating of 2.70 for road transport. The rail freight is, therefore, considered to be higher as compared to road freight for the same destination. The difference in the two rates is significant.

Loss/Damage Enroute

Loss or damage to cement consignments takes place either due to inclement weather causing setting of cement by wet, or due to the use of hooks by labour while handling cement bags at the time of loading and unloading. A cement bag is handled a great number of times if transported by rail if it is transported by road. Therefore, chances of loss/damage, enroute, are more in the case of rail transportation.

The comparative ratings have been measured on a five-point scale. A rating of 1 on this scale means negligible damage/loss enroute while a rating of 5 would mean substantial loss/damage on the same route.

The respondents have given a mean rating of 2.7 for rail transportation and 2.2 for road transportation. This means that they have experienced a higher degree of damage/loss to cement consignments when transported by rail.

Information Availability

Information availability and shipment tracking are similar terms. The respondents would like to have availability of information in a number of areas. They would like to know when wagons or trucks are likely to be supplied for a particular destination. If the cement consignments have been loaded, the respondents would like to know when these are likely to reach the destination. If there are any delays enroute, the reasons for such delays should be known at the earliest. The respondents would like to know the progress of movement of their consignments on a daily basis till these reach the destination.

The ratings on information availability were compared between railways and roadways on a five-point scale. A rating of 1 on this scale denotes " Never on Time" while a rating of 5, the highest on the scale, denotes "Always on Time". 28 respondent companies rated railways and gave them an average score of 2.3 while the roadways scored 3.7.

The above ratings show that the respondents get information from the roadways in time, while they do not get the same from the railways.

Reach

Reach means the capability of a transport system to reach the cement consignments to a large number of destinations for the respondents. These destinations should be as close as possible to the stock/dump yard or the dealer's godown so that the respondent or his customer has to spend as little money as

possible, for local transportation of the consignment upto the stock yard/dealer's godown.

The feed back on ratings for 'Reach' was given by 27 out of the 29 respondents. The average rating for railways comes to 2.7 while the same for roadways comes to 4.0 on a scale of 1 to 5. A rating of 1 on this scale, means that the reach is "very narrow" while a rating of 5, means a "very wide" reach.

The respondents feel that the reach of railways is not wide enough while that of roadways is much wider and it meets their expectations to a large extent.

Claims Settlement

Claims against transport organisations arise because of loss or damage to cement consignments in transit. The loss/damage may be caused by rain, negligence of labour handling the cement bags or due to any accident in which the consignment gets involved. If a claim is lodged, it has to be settled in order to compensate the owner for the loss or damage that his goods have suffered. A verification of the claim made by the owners takes some time. During this period, the money value of the damaged/lost consignment remains blocked with the transport organisation.

The Railways have created a full-fledged claims organization, as a part of their commercial department, to settle such claims. The satisfaction level of the respondents was measured on a scale of 1 to 5. The railways and the roadways were rated on this scale by 28 out of the 29 respondents. The mean ratings are:

Railways 1.6

Roadways 4.5

The above scores suggest a high level of satisfaction with the roadways, which have a score of 4.5. Therefore, settlement of claims by the road transporters is "very prompt". A score of 1.6 for railways is very low and shows that the settlement of claims is "very delayed". This is, apparently, a cause of dissatisfaction of the respondents with rail transportation.

Consumers' Preferences Towards Mode of Transport (Q.3)

In this question, the respondents were asked to give their transport mode preference between railways and roadways if both the systems charge the same freight for the same destination. The reasons for preferring a particular mode of transport were also to be given. The responses are given in Table 5.4 enclosed as Annexure 5.

Total number of Respondents	=	29
Participating Respondents	=	28
Respondents preferring Railways	=	3
Respondents preferring Roadways	=	25

Reasons for Preferring Rail Transport

		No. of Respondents
Faster Movement	=	1
More suitable for bulk movement	=	1
Unspecified	=	1

Reasons for Preferring Road Transport

The following reasons have been given by the respondents for preferring road transport. The number of respondents and their percentage giving a particular reason, is also shown in Table 5.3.

Table 5.3 Reasons for Preferring Road Transport

S.No.	Reason	No. of Resp.	Percent
1.	Door to door Service	15	53.6
2.	Smaller quantities moved at a time	6	21.4
3.	Faster delivery (transit)	9	32
4.	Wider Reach	4	14.3
5.	Avoids multiple handling	7	25
6.	More economical	7	25
7.	Less Loss/damage enroute	8	28.6
8.	Flexibility	4	14.3
9.	Quick settlement of claims	1	3.6
10.	No demurrage/wharfage	3	10.7
11.	Customer satisfaction	2	7.1
12.	No industrial relations/ labour problems	1	3.8
13.	Easier availability of trucks	2	7.1

The reasons for the respondents preferring roadways as a mode of transport over railways as obtained from our analysis of the data are listed below **in order of importance** :

Door to door service.

Faster transit time.

Loss/Damage enroute.

More economical.

Avoidance of multiple handling.

Movement of smaller lots of cement.

Wider reach.

Flexibility.

No demurrage/wharfage payments.

Easy availability of trucks.

Better customer satisfaction.

Quick settlement of claims.

No industrial relations problems.

Door to door service was the single largest reason given by respondents, for preferring road transport. More than half the respondents gave this reason for their preference of road over rail.

Faster transit, cited by thirty two percent of the 28 respondents is the second main reason for preferring road transport.

These reasons are followed by lesser loss/damage enroute, lower cost of transportation, lesser number of handlings and movements of smaller lots of cement and wider reach, in that order, for preferring road transport to rail.

Problem Areas in Rail Transport (Q.4)

This question deals with the respondents' problem areas with the working of the Railways. The respondents were asked to rate the six areas given in the question, on a scale of 1 to 5. A rating of 1 would mean "Least Problematic" and a rating of 5, on this scale, would mean "Most Problematic". The problematic areas identified in the question are:

- Taking allotment of wagons on a day-to-day basis.
- Little flexibility in changing destinations and products.
- Not getting the right kind of wagons when required.
- No knowledge of consignments after dispatch.
- Marking of wagons, after loading, as "sick" by the railway staff.
- Wrong interpretation of rules by commercial staff on 'Train Load' freight.

The replies, received from the respondents, have been tabulated and are given in Annexure 6.

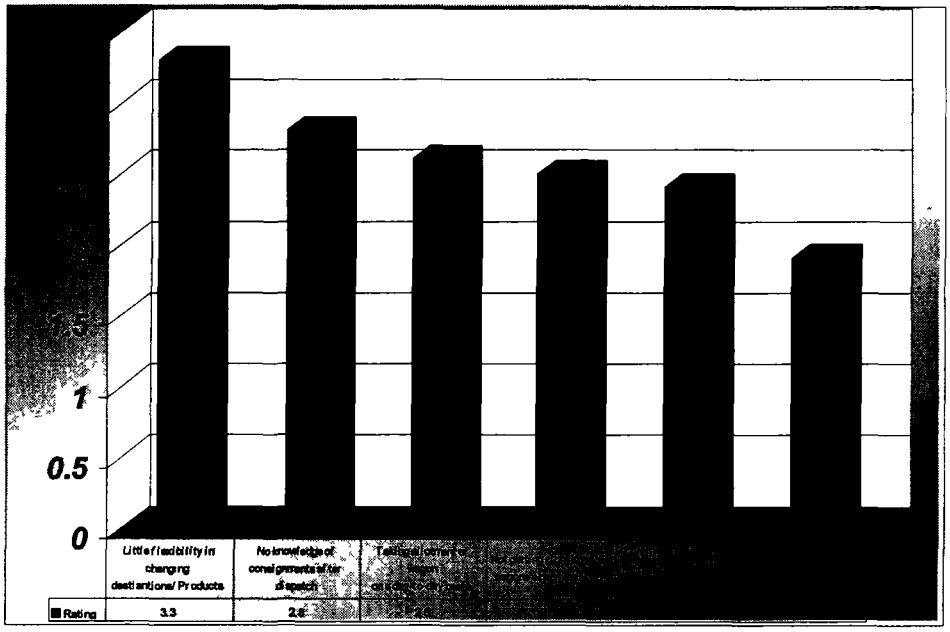
The problematic areas, along with the mean ratings, given by the respondents, are shown in Table 5.4.

Table 5.4 Mean Ratings and Ranking of Problem Areas

Rank	Problem Area	Rating
1	Little flexibility in changing destinations/products	3.3
2.	No knowledge of consignment after dispatch	2.8
3.	Taking allotment of wagon on a day-to-day basis	2.6
4.	Not getting right kind of wagons when required	2.5
5.	Wrong interpretation by commercial staff on train load	2.4
6.	Railways marking wagons sick after loading	1.9

These rating have been shown on a bar chart in Figure 5.3.

Fig. 5.3



a) Flexibility in Changing Destination

As their first priority, the respondents would like the Railways to allow flexibility in changing destinations of their cement consignments at short notice. This becomes necessary for the respondents due to a number of reasons. However, the Railways do not, normally, permit any change in destination or in the description of goods once a formal demand has been placed by the consignor at a station.

b) Information about Cement Consignments

Information about the cement consignments comes second in the list. At present, it is difficult to know about the whereabouts of the consignment once it has been dispatched from the originating station.

c) Allotment of Wagons

Taking allotment of wagons and getting the right kind of wagons when required come third and fourth in importance. These problems have received a rating of 2.6 and 2.5 respectively. Getting wagons, when required and also the right kind of wagons can be a problem for the cement manufacturers. This problem arises, as after the registration of their demand for wagons, the Railways do not guarantee that the same will be supplied on the day the wagons are required for loading by the cement manufacturers. The wagons may be clean or may need cleaning if these were loaded by some other commodity like coal, in the previous trip. The condition of such wagons affects the quality of cement received by its the consumers unless the wagons are cleaned before loading. The Railways do not given any extra free time to the cement companies for this purpose. They also do not, effectively, supply clean and watertight wagons, which would not leak in the rainy season.

d) Interpretation of Commercial Rules & Marking Wagons "Sick"

The fifth important problem concerns proper interpretation of the commercial rules, particularly, for trainload freight by the railway line staff dealing with the respondents. They feel that the interpretation of rules, is not correctly done by the railway commercial staff. Marking wagons "sick", after loading, poses another serious problem for the cement manufacturers. Such wagons get, abnormally, delayed in reaching their destinations, thereby, blocking the capital cost of the cement loaded in these. The problem has been controlled by the Railways with the introduction of air brake wagons, which do not, normally become sick after loading. These wagons are made of better material, are fitted with roller bearings and do not leak in the rainy season.

Measures to Improve the Railway Freight Services (Q.5)

This question suggests eight steps, which the Railways can take to improve their service to their customers. These steps were rated on a five-point scale for "Importance" as well as for "Priority". The ratings were given by the

respondents. A rating of '1', on this scale, means, "Least Important"/"Lowest Priority" while a rating of '5' denotes "Most Important"/ " Highest Priority".

The suggested steps are: -

1. Reduction in freight charges.
2. Reduction in minimum quantity for dispatch.
3. More number of two and three point rake combinations.
4. Prompt claims settlement.
5. Simplification of Rules.
6. Designing specialised wagons for cement transportation.
7. Reduction in transit time.
8. Any other (to be specified by the respondent).

The ratings given by the respondents have been tabulated in Annexure 7. The arithmetic mean of the total rating for each suggested step has been considered as the mean rating given by respondents for that particular step for its "Importance" as well as "Priority" as perceived by the respondents.

Out of a total of 27 respondents, one did not fill up any details in reply to this question. 4 respondents did not rate the "Importance" parameter on claim settlement while 5 of them did not rate the following parameters:

- Freight Reduction for "Priority".
- Minimum Quantity for "Priority"
- More 2/3 Point Rakes for "Priority"
- Prompt Claims Settlements for "Priority".
- Simplification of Rules for "Priority".
- Design Special Wagons for "Importance".

Nine of the respondents did not give any rating for rate the "Priority" of Designing Special Wagons and Reduced Transit Time. 7 respondents have given additional suggestions under the heading "Any other suggestions". These suggestions, along with their importance and priority are given in Annexure 8.

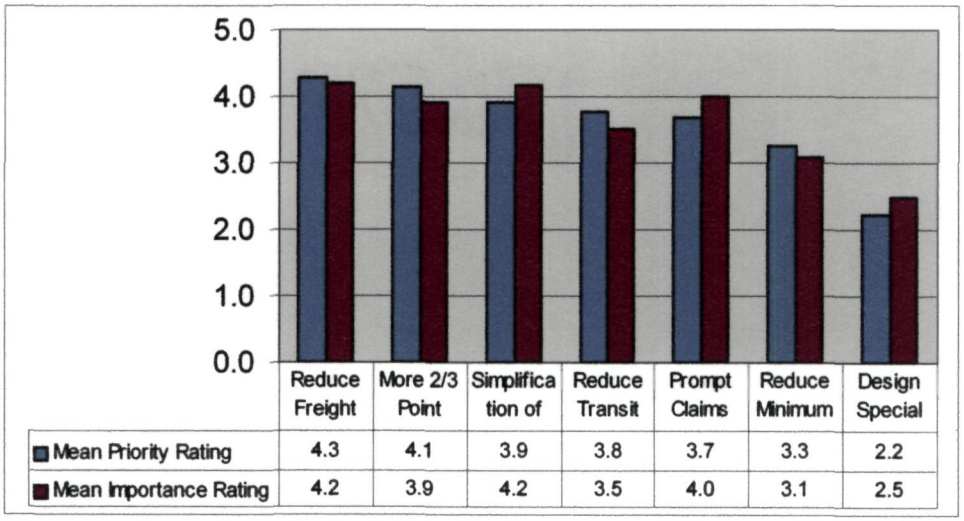
An analysis of the respondents' views shows that they expect the Railways to take a number of steps for improving service. These are given in Table 5.5, in order of priority. The mean importance rating has also been shown in this table.

Table 5.5 Priority/Importance Ratings: Suggested Measures to Improve the Railway Service

S. No.	Suggestion	Mean Priority Rating	Mean Importance Rating
1.	Reduce Freight Charges	4.3	4.2
2.	More 2/3 Point Rake combinations	4.14	3.92
3.	Simplification of Rules	3.91	4.16
4.	Reduce Transit Time	3.78	3.52
5.	Prompt Claims Settlement	3.68	4.0
6.	Reduce Minimum Quantity for rake dispatch	3.27	3.08
7.	Design Special wagons for Cement Transportation	2.22	2.50

These rating have been plotted on a bar chart and are given in Fig. 5.4.

Fig. 5.4



Some of the respondents have not given importance or priority ratings against some suggestions. Out of this list, suggestions of high importance or high priority are: -

- Provision of warehousing facility inside the railway wagon-unloading complex.
- Higher free time for loading and unloading of cement rakes.
- Improvement in behaviour of the front-line staff
- Efficient wagon tracing system

- Easy availability of rules and circulars to the customers.
- Timely issue of railway receipts.
- Improvement in accessibility of railway officers.

These suggestions, along with their priority rating and importance, will be discussed, in the next chapter.

Analysis of Quantitative Dimensions

This part of the questionnaire consists of seven questions. These questions, mainly, concern the production and dispatches of cement by the manufacturers.

In the first question, the respondents were requested to furnish data about production and dispatches for cement for a period of twelve years from 1990-91 to 2001-02. They were also requested to give the installed annual capacity in tonnes for the cement plant concerned.

The second question deals with types of distribution channels used by the cement companies for distributing cement. They were asked to identify the different channels used by them viz. company owned stock/dump yards, dealerships, direct delivery to customers or any other channels used by them.

The third question classifies the customers of the cement companies on the basis of tonnage of cement demanded by them per month. The number of customers was divided into the following six groups.

Tonnage per month

- Less than 200
- 200-500
- 500-1000
- 1000-1500
- 1500-3000
- 3000 and above

An attempt was made to find out the preferred mode of dispatch of cement for each of the six groups of customers, based on the tonnage lifted. plant.

Question 4 deals with the year wise dispatches of cement through each distribution channel of the cement company. These dispatches were taken for same period as in Question 1 i.e. from the year 1990-91 to 2000-2001.

Replies to the Question 5, divide the total annual dispatches of the cement plants into four zones i.e. North, South, West and East, for each respondent. The figures represent the total cement dispatches, in tonnes, by all modes of transport taken together during the above period.

Question 6 divides the year-wise cement dispatches of each respondent between the two main modes of transport i.e. road and rail.

Question 7 deals with the comparative landed price of cement, dispatched by road as well as rail, for three most important destinations, in each of the four zones given above. Thus, if a respondent dispatches cement to all the four zones, he was requested to give details of 3X4=12 destinations. The components of the landed price are given in the question to help the respondent to fill up the details. These components are: -

- Freight.
- Handling charges at the destination.
- Demurrage and shunting charges.
- Transhipment charges.
- Secondary freight.
- Any others.

The landed price for road or rail can be compiled by adding up the price of each of the above components.

Production/Dispatches of Cement and Its Comparison With the Rail/Road Dispatches for Each Plant (Q.1 and Q.6)

Yearwise dispatches of cement were obtained from the respondents. The data of total dispatches made by each respondent plant was compared with the dispatches made by the plant, separately, by road and rail. The data of dispatches by road and rail, for each year, for the period 1990-91 to 2001-02, is available from Question 6. Dispatches of Cement by road and rail for the years 1991-92 and 2001-02 are given in Annexures 9 and 10 respectively.

The data obtained from Question Numbers 1 and 6 were combined for the purpose of comparison of yearly rail and road dispatches by each respondent. The data also helped us in calculating the percentage of road and rail share for despatches of each plant.

Percentage variation in the share of the road and rail dispatches is given in Annexure 11.

Out of the twenty-nine respondents four did not respond to either question 1 or question 6. These two questions have been taken together for analysis. One of the respondents was from a bulk cement-handling terminal, which only receives cement. Nine respondents had started manufacturing cement after 1993 while one had started in 1992-93. All other respondents have been manufacturing cement since 1991 or prior to it. Respondent No. 8 (M/s ACC Tikaria) and M/s L&T Rajula filled up the questionnaire but have not dispatched any cement by rail.

Eleven respondents (Nos.1,3,5,6,7,22,23,24,25,27,29) were dispatching more than 40% of the cement by rail to start with. Out of these only three i.e. respondent numbers 6,23 and 24 increased their dispatches by rail. They were dispatching 91%, 77% and 58% respectively of their cement production by rail even in the year 2001-02. Other eight respondents reduced their rail dispatches during the period.

Cement plants, which have come up in the last 6 years, have planned most of their dispatches by road (Respondent Nos. 8, 10,14,18,22,26 & 28) right from the commencement of their production.

Rail share for fourteen respondents has gone down while the share of roadways has correspondingly gone up.

We will now compare the total dispatches of cement for the years 1991-92 and 2001-02 by road and rail from those respondents (old cement plants) who have been manufacturing cement from 1991-92 onwards. This analysis is given in Annexure 12.

In respect of the above respondents, for the period from 1991-92 to 2001-02 i.e. 11 years, the cement dispatches increased from 84.88 lakh tonnes to 136.4 lakh tonnes, thereby, giving an increase of 60.7 percent. However, during this period the rail dispatches increased from 45.03 lakh tonnes to 57.6 lakh tonnes i.e. 12.57 lakh tonnes, i.e., by 27.9 percent only.

Thus for old cement plants the share of Railways went down from 53 percent in 1991-92 to 42.2 percent in 2001-02. This is shown in Fig. 5.5.

Fig. 5.5

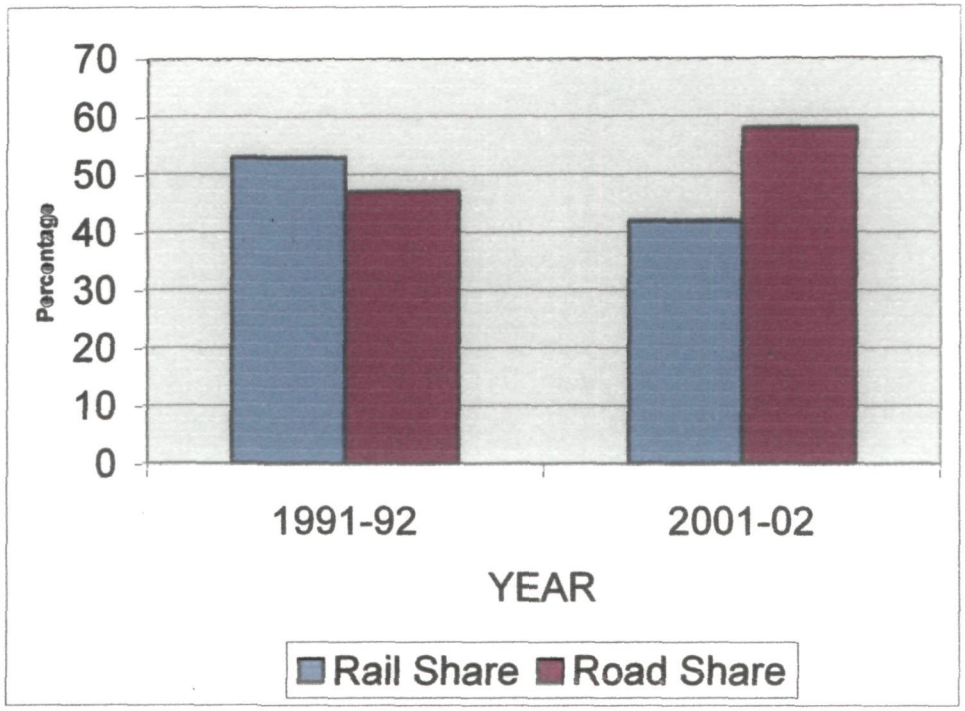


Table 5.6 Overall Comparative Despatches by Rail/Road

YEAR	Total (Lac tones)	Road (Lac tones)	Rail (Lac tones)	%age Road Share	%age Rail Share
1990-91	160.3	99.5	60.8	62	38
2001-02	261.64	176.04	85.6	67	33

An analysis of cement despatches by road and rail for the period 1991-92 to 2001-02 shows that :-

- The railways are, continuously, losing their share in cement transportation.
- The share is being lost, almost entirely, to the roadways.
- The cement plants, which have come up in the recent past (6-7 years), have taken to roadways, in preference to the railways.
- The railways' share of cement traffic has sharply come down in the past 6 to 7 years.

Distribution Channels Used by the Cement Companies (Q.2)

From the data available in reply to this question, we came to know the number and the types of distribution channels used by the respondents. The details are given in Table 5.7.

Table 5.7 Distribution Channels

S.No.	Channel used	Respondent Numbers	Total
1	Stock/Dump Yard	1,3,5,6,7,10,11,12,15,16, 18,20,21,22,23,24,25,26, 2729	20
2	Dealership	1,3,4,5,6,7,10,11,15,16,1 718,19,20,21,22,23,26,27 ,28,29	21
3	Direct to Customers	1,3,5,6,7,8,10,12,15,16,1 7,18,20,21,22,23,25,26,2 7,28,29	21
4	Others		0

- Out of the twenty-nine respondents there are four cases of no response. These respondents did not reply to this question.
- Out of the remaining 25 respondents, six do not have any company owned stock/dump yard. They are operating through either dealerships or direct delivery to the customers.
- There are four cases of respondent companies having no dealerships at all. They operate though company owned stock/dump yards or through direct delivery by road to customers.

- Four respondents do not make any direct deliveries to their customers. Out of these, there are 3 respondents whose only distribution channel is through their dealers. There is one case in which the only distribution channel is the company owned stock/dump yard.
- Respondent No. 8 is a grinding/packaging unit and is dispatching 100% cement directly by road to parties.

The above analysis shows that :

- A large majority of the respondents operate through multiple distribution channels. 19 out of 25 respondents, operate through all the three distribution channels, namely company owned stockyards, dealerships and direct delivery to the customers.
- The grinding and packaging units are, normally, located close to the consumption areas. These units send their cement, directly, to their customers by road because of short leads of movement.

Types of Customers on the Basis of Monthly Dispatches (Q.3)

In this question, the customers/users of cement for each respondent have been divided into six groups based on the monthly tonnage lifted by them. The number of such customers for each group and the total tonnage lifted per month was also given by the respondents. This tonnage was linked to the preferred mode of dispatch for each respondent. It was found that the mode of dispatch should shift in favour of the Railways as the tonnage lifted by each customer increases.

The total tonnage of each group has given an indication of the extent of the dispatches, made to small customers. Dispatches to small customers are less amenable to rail movement unless a large number of such customers are located at the same station or an area around it. The data have been tabulated in and are enclosed as Annexure 13.

Analysing the data given in Annexure 13, we find that :

- 13 out of a total of twenty-nine respondents did not furnish any information in reply to this question.
- Six out of the remaining sixteen respondents are dispatching cement directly to their customers by road only. These figures include only dispatches of

cement directly to customers but do not include dispatches to dealers or company owned stock/dump yards

- Only one respondent (No.10) is dispatching cement by road as well as by sea.
- Nine respondents are dispatching to their customers directly using a mix of road and rail transport.

The above analysis leads us to the following findings:-

- A majority of cement plants are using a mix of road and rail transport to dispatch directly to their customers.
- Dispatches to individual customers, whose monthly requirement is more than 1000 tonnes, are more likely by rail.
- There is a possibility of clubbing the demands of direct customers of cement companies and moving the same by railway rakes if the monthly consumption of each customer is around 1000 tonnes.

Relative use of Distribution Channels for Cement dispatches (Q.4)

This question was designed to provide a break up of the yearwise dispatches to different distribution channels used by the respondents. The proportion of cement dispatches to stock/dump yards, dealers and direct delivery to customers was worked out. The 12 year period was divided into two to six year sub periods i.e. from 1990-91 to 1995-96 and from 1996-97 to 2001-02. The trend of dispatches through the three distribution channels was analysed. The tabulated details are given in Annexure 14.

An analysis of the data in Annexure 14 shows that :-

- Ten respondents gave details of their channelwise dispatches for the period 1996-97 to 2001-02 only. They could not provide data for the period prior to 1996-97.
- During the period 1996-97 to 2001-02, the comparative dispatches by the respondents through the three channels were as follows:

Channel	**1995-96**	**2001-02**
Stock/dump yards	49.5%	50.5%
Dealers	24.8%	26.0%
Direct to Parties	25.7%	23.5%

The above analysis leads us to the following findings:-

- The proportion of direct movement of cement from the cement plants to the parties has, marginally, reduced over the period.
- The movement to stockyards/dump yards owned by companies has, marginally, increased.
- The movement of cement to the dealers has shown some increase. In other words some of the cement companies now prefer to dispatch more cement through their authorised dealers in stead of sending the same to company owned stock/dump yards.
- The increased movement to dealers will increase the number of destination points. This trend favours movement by roadways, owing to their wider reach as perceived by the respondents.

Zonewise Pattern of Cement Dispatches (Q.5)

The respondents were asked to give their zonewise pattern of annual cement dispatches. The dispatches were classified into four zones, direction wise, viz. North, South, West and East zones. The zonewise dispatches, for the period 1991-92 to 2001-02 were considered to compare the trend of despatches between the two periods from 1991-92 to 1995-96 and from 1996-97 to 2001-02. The data obtained from the respondents was analysed to find out the following: -

(i) Whether the respondents, situated in a particular zone, are dispatching cement, mainly, in the same zone or they despatch to other zones also.

(ii) Whether there has been any change in the pattern of dispatches over the period under consideration.

(iii) For those plants, which are situated in one zone but are dispatching to another zone, whether dispatches by rail have increased when their inter zone dispatches increased and the intra zone movement correspondingly decreased.

The data received from the respondents were tabulated for analysis and as shown in Annexure 15.

- Four respondents could not give details of their dispatches for the period 1991-92 to 1995-96.
- Respondents in the eastern zone are dispatching cement within the zone only.

- Respondents in the southern zone are dispatching cement, mostly, towards the Southern zone. Only respondent nos. 3 and 25 has been dispatching 1 to 2 % of their cement towards the west.
- Respondent no. 23 (Maihar Cement, Satna) has been dispatching cement towards the east and central zone also.
- Respondents in the western zone are dispatching a fairly large percentage of their cement production towards the northern zone.

We find from the analysis that :

- Respondents located in the central zone are dispatching cement, pre-dominantly, in the same zone.
- There has been no significant change in the pattern of zonewise dispatches of cement during the period 1991-92 to 2001-02.
- Cement plants with higher production capacities dispatch more cement outside the zones, in which these are situated, as compared to, plants having small installed capacities.
- Respondents having demands for longer leads, are dispatching more cement by rail. This is particularly so in the case of cement plants located in the western zone who are sending large quantities of cement to their customers in the northern zone.
- There is a, recent, tendency of the respondents to increase rail dispatches, if they are located in one zone (particularly, western) but are dispatching large quantities to other zones (particularly northern).

Components of Landed Price for Three Important Destinations in Each Zone (Q.7)

The respondents were requested to give details of the components of the landed price of cement by rail, as well as, by road for three most important destinations in each zone to which they dispatch cement. The following components of landed price were identified to be filled up (Rupees per tonne)

- Freight
- Handling at Destination
- Demurrage and Shunting
- Transhipment
- Secondary Freight
- Any other (To be specified by the respondents)

The meaning of each of these components is explained below.

Freight

This is a common term applicable to rail as well as road movement. It means the basic charge for transporting a commodity from one point to another. In railway transportation, the Railways do not provide any labour for loading or unloading of the goods. The wagons are supplied at the railway goods shed or at the siding of the cement consignor/plant as the case may be. In road transportation too, the loading and unloading has to be done by the consignor or the consignee at his cost. The freight charges are levied, both by road and rail transporters, in terms of rupees per tonne of the cement transported.

Handling at Destination

These charges are incurred for unloading of cement bags from the wagons into the trucks. These include charges for unloading of cement from wagons to the goods platform and then loading these from the goods platform to the trucks for onward movement to the final consumer/stockyard or dealer.

Demurrage and Shunting

Demurrage charges are levied, in case, the wagons provided for loading or unloading are detained beyond the free time stipulated by the Railways as per their rules. The road transporters, are flexible in this respect and do not charge their customers for extra detention to the trucks. Shunting charges are levied by the Railways only for placement of wagons/rakes in the private siding of the consignor (cement plant in this case) or the consignee. Railway wagons have to be placed by a locomotive, which is, generally, provided by the Railways. Shunting charges are levied for the use of the railway locomotive, which has to be, especially, sent to the private siding for the placement/removal of wagons. However, if the wagons are loaded or unloaded at a goods shed, the Railways do not levy any shunting or siding charges.

Transhipment

This charge is peculiar only to railway transportation. Transhipment of a consignment has to be done from one wagon to another wagon of a different Gauge. On the railways, it can be from Broad Gauge to Meter Gauge or vice-versa depending on the railway gauge available at the loading and unloading

stations. If the two gauges are different, the contents of the wagons will have to be transshipped from one gauge to another.

Secondary Freight

This is the freight charge, which the ultimate buyers of cement have to pay for transportation of cement from the railhead at the destination station to the final destination point where the cement has to be delivered.

To understand the extent to which various components of the landed price affect the comparative economics of road and rail transportation of cement, we need to work out the net, overall cost difference between the two modes, in addition to the difference in the cost of individual components for cement dispatched, from each zone of a respondent company. This information is vital for the Railways as they would like to have a greater share of the cement traffic. The price difference for each component for movement by road and rail, has been worked out for each respondent and is shown in Annexure 16.

- A total of 74 destinations were available for studying the comparative road and rail landed price of cement.
- 8 out of 74 destinations were found to be cheaper by rail as reported by 4 of the respondents. For respondent no. 7 (Ambuja Cement; Raipur) all the three destinations are cheaper by rail. For respondent no. 4, (Shri Vishnu Cements Ltd.) two out of the three important destinations are cheaper by rail. The third one is only 6 percent costlier as compared to road transport.
- Percentage difference in the landed cost of transport were worked out for each destination for all the respondents. The difference was worked out taking the landed price of road movement as the base. A positive difference means that rail transport is costlier than road while a negative difference means that rail transport is cheaper for that particular destination.
- Out of 18 respondents to this question, only five resondents are dispatching cement to more than one zone:
- Respondent No. 23 (Maihar Cement Satna) is dispatching cement to destinations to three zones.
- For the 64 destinations, which are costlier by rail, the average difference between the landed price of rail and that of road transport is 33 percent.

  A total of 33 destinations are costlier by rail, up to 20%, as compared to road freight.

- There are 31 destinations, which are costlier by rail by at least 30 percent as compared to the road freight.
- For short lead destinations, where the rail freight is less than Rs. 350/- per tonne, the landed price by road is less, causing a substantial difference between the two prices in favour of road movement.
- The handling cost per tonne, at the destination is much higher in case of rail transport as compared to the same for road transport. In fact, in certain cases, this cost for road transport is either zero or negligible.
- The secondary freight for a number of destinations fed by road is zero. It is very low as compared to rail transport in most of the cases.
- Other charges like service charges, sales tax etc. have been shown in case of rail movement only in most of the cases.
- Demurrage, shunting and transhipment charges are levied for movement by rail only. Demurrage charges leviable are by roadways also. However, in no case, these have been levied by road transporters even if the trucks are detained by the cement companies.
- Transhipment charges are peculiar to rail movement only when the destinations station is on a different gauge than gauge at the loading station, and the consignment has been transferred from wagons of one gauge to the wagons of the other gauge.

Findings

The above analysis leads us the following findings:

- To compete with roadways, the Railways need to have a fresh look at their demurrage rules.
- Shunting charges are levied in the private railway sidings. There is a need for review of this policy by the Railways.
- Handling charges at the destinations are much higher for rail movement. This is again because of the limited free time available to the customers for unloading and removal of consignments. This means double handling of the same cement bag once for unloading from the wagons to the goods platform and again from the goods platform to the truck. The Railways give free time, separately, for unloading and removal operations.
- Secondary freight is charged for road movement from the unloading railway station to the premises of the dealer or the stockyard of the company. This

charge is incurred, mostly, in case of rail movement to unloading stations. The Railways need to find ways and means to eliminate or reduce this charge to become competitive.

- For short lead destinations where the railway freight is less than Rs. 350/-per tonne, the Railways are at a disadvantage as the landed cost for rail movement is considerably higher as compared to the same for road movement to the same destination. The Railways need to review their tariff structure for short leads to become more competitive.
- The customer relations of the Railways, at the loading and unloading points, need improvement so that the customers do not have to pay hidden charges like service charge etc. Such charges do not add to the railway revenue but they act as disincentives for the customers who move their cement traffic by rail.
- Since handling charges at the destination and secondary freight for different destinations are different for different destinations, the basic railway freight should be made more flexible to take care of such situations.
- Even those respondents, (nos.3,4,7,23) who are dispatching a major share of their traffic by rail, would prefer to dispatch their cement traffic by roadways even if the freight charges of rail and road movement are the same.

The list of destinations for comparing the landed price of cement movement by rail and road is given in Annexure 17.

Interview/Seminars/Conferences

A list of interviews, seminars and conferences is enclosed as Annexure18. A gist of the interviews is given in Annexures 19 to 25. Issues, brought out by Shri A.V. Srinivasan, Secretary General, Cement Manufacturers' Association, during the seminar on cement industry's perspective are enclosed as Annexure 26. Issues, raised by the cement industry during its meeting held with Member (Traffic) Railway Board, are enclosed as Annexure 27.

CHAPTER VI

MARKETING IMPLICATIONS AND SWOT ANALYSIS

The findings of the study concern the following broad strategic areas

1. Freight Charges
2. Flexibility
3. Transit Time
4. Reliability including Loss/Damage Enroute
5. Settlement of Claims
6. Customer Satisfaction
7. Wide Reach.

These areas can be linked to the present marketing mix of the Indian Railways.

Freight charges concern the pricing strategy while the transit time and wide reach form a part of the distribution network strategy. Flexibility and settlement of claims are covered in the process dimension. Reliability and loss/damage, enroute, are the ingredients of the service quality along with the process of delivery. Customer satisfaction impinges upon more than one element of the marketing mix. Though it is, primarily, dependent on the people of the service organisation, it has a direct relationship with the quality of service and the process of delivery.

The service quality consists of the following broad elements :

- Tangibles
- Reliability
- Responsiveness
- Assurance
- Empathy

Having linked the findings to the elements of the marketing mix, individual areas, in each of these marketing elements where the cement companies are facing problems with the Railways, can be identified.

6.1 Pricing

The pricing of rail transport, when compared with other modes of transport, poses the following problems for the cement companies:

a) Railway freight, from the originating station to the destination station, is higher as compared to road, particularly, for short lead destinations. For such destinations, the difference is of the order of 30%.

b) Handling charges at the destination station are additional charges which are payable in case of rail movement but are not payable in case of road movement.

c) Secondary freight, for transporting cement by road to the stock yard/dealers' premises, involves additional cost for transporting/storage/stacking of cement. Railways do not provide any stacking/storage facilities even at the major unloading stations.

d) Siding and shunting charges are levied by the Railways as per the old agreements with the cement companies. The benefit of charging freight for through distance to the dead end of the siding should be given to the cement siding owners to reduce the incidence of siding/shunting charges payable by them.

e) Demurrage and wharfage charges are levied for movement by rail. The cement companies do not pay these charges for road movement. These charges need to be reviewed to take care of the genuine problems of the cement industry.

f) There are heavy delays on the part of the Railways in settlement of claims. A large number of cases are being referred to the Railway Claims Tribunals by the customers due to the procedural delays. The system of settlement of claims adds to the cost of cement and, therefore, needs review.

g) Cost of warehousing at the terminals where cement rakes are unloaded, is, substantially, high, as the rakes have to be removed within the free time allowed by the Railways. Cement stocks are kept by the cement companies in private warehouses, in the city areas, which are quite far away from the nearest railhead.

h) As the size of the railway rakes has increased during the past few years, the cement sidings, which are old, need to be remodelled to handle the heavier and longer rakes. The cement companies would like the Railways

to share the cost of remodelling of their sidings, as according to them, the increase in rake size, is a decision of the Railways alone.

i) The Railways have to train their frontline staff by upgrading their skills so that the customers do not have to pay any hidden charges.

j) Gauge conversion and electrification are operational decisions of the Railways.Therefore, the cost of the electrification and the gauge conversion of the sidings should be borne by them.

k) The cost of commercial and train examination staff, posted in sidings, should be borne by the Railways, and not by the siding owners, as issue of railway receipts and examination of wagons are functions to be performed by the Railways as a part of their service to the cement companies.

6.2 Distribution

This concerns the reach of the railways for transporting cement to a large number of points.

a) To increase the reach of the railways, flexibility is required by the cement companies in the following areas :

i) The cement companies feel that they should be allowed to change destination of the rake, whenever it is necessary, so that the uncertainties of the cement market can be taken care of by the cement companies to some extent.

ii) At present, the minimum rake size is 38 BCN i.e. 38 x 56 = 2128 tonnes. Cement industry would like that rake load benefit should be allowed by the Railways by reducing the rake size for those destinations for which sufficient demand is not available during certain periods of the year.

b) More two point block rake destinations should be permitted. Some three point block rakes combinations should also be allowed by Railways to look after the smaller customers.

c) The Railways should permit clubbing of demands by different consumers, at a destination, more freely.

d) Allowing loading, without operating restrictions, for movement towards the North-Eastern States. Cement should be exempted from such restrictions, as it is an essential commodity.

e) Movement of smaller lots of cement to individual points should be permitted.

f) The transit time for rail movement from the loading point to the final destination of cement should be reduced.

g) Railways should provide warehousing at the railway goods sheds so that multiple handling charges of cement can be reduced.

6.3 Process

a) Railway rules should be made more flexible in the following areas:

i) The rules are very rigid and old. Very little discretion is allowed to the officials, particularly, to the frontline staff. More discretionary powers should be given to the frontline staff to take care of the problems on the spot.

ii) The rules, regarding levy and waival of demurrage/wharfage charges are very rigid and need to be made more flexible to take into account the genuine problems faced by the customers in unloading / removing the consignments at the railway goods sheds.

b) Maintenance of goods sheds/mineral sidings and circulating areas for unloading and removal of consignments is unsatisfactory. Little attention is being paid by the Railways to this aspect, resulting in inconvenience to the customers, in unloading and removal of the consignments from the Railway premises.

c) Credit/debit system for demurrage hours at the cement loading points should be granted by the Railways on the same lines as they have granted to the steel plants.

d) Delay in decision-making on concessional schemes like Station-to-Station Rates Scheme, Volume Discount Scheme and Own Your Wagon Scheme. The delay in decision-making in individual cases is turning the cement companies away from the Railways. The Own Your Wagon scheme is not customer friendly. Therefore, the cement companies are not opting for the scheme.

e) The provisions regarding penal charges for overloading of coal wagons have been made more stringent in the revised Indian Railway Act. Payment of large amounts of penal freight by cement companies is being resented by them.

f) Lack of transparency in application of the railway rules. Customers are not made fully aware of the railway rules, which concern them. The rules are

also not applied, uniformly for all. This attitude of the Railways causes dissatisfaction.

g) Procedure of allotment of wagons is complicated. The frontline staff do not explain to their customers why wagons were allotted to some customers while other customers were kept waiting.

h) The railway rules are complicated and inflexible. The approach of the officers and staff is bureaucratic and unhelpful.

i) The railway receipts are not issued in time by the siding clerks. On weekends and holidays, the Railways do not accept payments by cheque. Bank drafts cannot be issued by the banks on Sundays/ holidays. As a result, the consignments remain held up in the railway premises, causing delay in dispatches.

j) Demand of bank guarantee by railways for payments made by cheque. This rule needs to be modified, as cheques of reputed companies should be accepted without any bank guarantee.

k) Availability of forecast of supply of rakes for loading cement is poor. The customers cannot make, timely arrangements for loading of cement at the sidings in the absence of the forecast.

l) Information about cement rakes in transit is, presently, not avaiable. However, it can be given by giving Freight Operations Information System (FOIS) terminals to the major cement customers of the Railways.

m) Delivery of consignments on indemnity bonds is not, normally, permitted by the Railways as there are a number of formalities to be observed by the customers. This facility should be made available with few formalities for reputed companies.

n) Settlement of claims is, invariably, delayed. In a number of cases, the Railways reject even genuine claims.

o) Door-to-door service is not available: The railways cannot reach the consignments to the final destination / godowns / stock yard of the cement customers. The cement companies are, therefore, hesitant to use the railways when they have an option to move cement by road.

p) Multiple handling in rail movement: This results in damage / loss of consignments. Multiple handling should be reduced to make the Railways more user friendly.

6.4 Product

Important dimensions of this marketing tool for rail transportation of cement are :-

a) Availability of wagons/rakes in time: The Railways do not guarantee supply of rakes on the days determined by the cement companies.

b) Carrying capacity of wagons: For certain qualities of coal, the railway wagons are not capable of carrying coal up to the marked carrying capacity. Despite representations made by cement companies, the Railways are not reducing the carrying capacity for transportation of such qualities of coal.

c) Railways should plan for movement of cement in bulk for large consumption areas like Delhi, Kolkata, Chennai, Bangalore etc. Specially designed wagons should be provided for this purpose.

d) Rake size flexibility for customers having a minimum monthly demand of 1000 tonnes. The minimum quantity to be carried in rake should be reduced from 38 x 56 = 2128 tonnes to about 1900 tonnes, till as per an agreed time frame, adequate facilities for loading / storage are developed by the cement companies at the two ends.

e) More 2/3 point rake combinations with the benefit of rake load freight charges should be given up to the last point of the destination of the rake.

f) Increasing the maximum distance of allowed for movement of'mini' rakes. The maximum distance for movement of mini rakes should be increased from 300 kms. to 400 kms. irrespective of the zonal railways on which the movement takes place.

g) Multiple handling of cement consignments before reaching the consumer: By providing warehousing facilities at the unloading points, the Railways can reduce the multiple handling of cement consignments.

h) The size of the block rake should be varied to some extent depending on the loading and unloading facilities at the two ends, till, as per an agreed time frame, adequate loading facilities are developed by the cement companies inside their plants for loading of heavier rakes.

i) The long lead traffic should be segmented by the Railways and targeted for hundred percent movement by rail. The Railways should give priority to this movement for diversion from road to rail by taking necessarysteps.

j) "Own Your Wagon' scheme has a number of flaws due to which it is not popular with the customers. This scheme should be made customer friendly.

k) The Railways should supply only such wagons as are fit for loading in all respects. If some wagons are marked sick after loading these get unduly delayed in reaching their destinations.

l) Supply of clean and watertight wagons for loading should be ensured by the Railways.

6.5 Physical Evidence

Physical evidence of rail transport includes

a) The wagons/rakes supplied for transportation of cement.

b) The railway receipts issued after booking of consignments.

c) The goods sheds and offices at cement handling points on the Railways.

d) The stations/yards sidings at the originating points of cement traffic.

e) The railway locomotives used for hauling the rakes.

f) Railway staff, in uniform, at the cement handling points.

6.6 People

The provision of railway transport service for cement involves the railway employees who render this service. The behaviour of the railway employees towards their customers and the accessibility of railway officers to the representatives of the cement industry determine the quality of service rendered by the Railways to their customers. Thus recruitment, training and motivation of the railway staff and officers are important dimensions for determining the type of interaction between the Railways and the cement industry.

6.7 Productivity and Quality of Service

These two elements, often treated separately, are strategically interrelated because neither of the two elements can be addressed in isolation. The Railways have been trying to keep their costs on passenger traffic under control by subsidizing the same from the revenues earned from freight traffic. This has resulted in increase of freight rates for most of the commodities. Over the past few years, cement industry feels that the railway freight rates for cement have become uncompetitive with road rates, mainly, because of this factor.

Service quality refers to the degree to which the rail transport service for cement satisfies the customers. Service quality is essential for the Railways to have product differentiation and build customer loyalty.

Reliability of rail transport and loss/damage to consignments enroute are the two major factors affecting the quality of service rendered by the Railways to the industry.

6.8 Promotion

This means the system adopted by the Railways to communicate with their customers. For a long time, the Railways have been working in monopolistic conditions as the demand for rail transport was more than the supply. The situation has now changed radically. Communicating with customers, has become very important for them to maintain their share in the transport system. The problems of communication between the Railways and the cement industry are:-

a) Lack of adequate information about availability and movement of rakes till these reach their destination.

b) Change of policies by the Railways to have bigger size of rakes for movement of cement traffic without giving adequate opportunity and information to the cement industry to remodel their sidings to suit the bigger size of rakes.

c) Changes made in the demurrage/wharfage rules without consulting and taking into account the problems of cement industry have made the cement customers unhappy.

d) Non-involvement of the cement industry in implementing the 'Engine-On-Load' concept for loading and unloading of cement.

e) Non-involvement of private parties including the cement industry in designing or improving warehousing and terminal facilities for handling of cement traffic.

f) Own Your Wagon scheme should be made user friendly and acceptable to the customers by better communication with them.

g) Availability of railway rules and procedures, freely to the cement industry, is not being ensured by the Railways.

6.9 SWOT Analysis

Strengths

- Indian Railways is owned by the Government of India. It derives a lot of strength from the Central Government.
- It has a history of more than 150 years of service to the nation.
- The Railways have a strong organisational structure as well as a culture of its own.
- It employs about 1.5 million people and is the largest employer in the country.
- The Railways are an essential part of the economic infrastructure of the country and have come up to face the challenges posed before it from time to time.
- There are no privately owned railways in India. Thus Indian Railways owns all the railway tracks in the country.
- The Railways have a separate budget which is presented to the Parliament every year. An independent budget gives it the required flexibility in financing its projects through its earnings.
- Railways are, particularly, suitable and economical for carrying passenger and freight traffic over long leads.
- The passenger fares are lower than the same on any other railway system in the world. The railways are, particularly, suitable for the mass transportation of passengers and goods.
- The railways are about 4 to 6 times more energy efficient than the Roadways.
- The railways are environment friendly. Movement by rail causes much less pollution than the same caused by road movement.
- Indian Railways is a vehicle for socio-economic development of the country.

Weaknesses

- Though the Railways is a large organisation, its size makes the organisation bureaucratic, causing delays in the decision making process.
- The reliability of service provided by the Railways is not as good as that of the roadways.
- The speed of transit for cement consignments is not as good as that of the roadways.

- The railway transportation system is perceived as rigid, lacking the necessary flexibility.
- The rail freight is higher than the road freight for the same distance if the total delivered/landed cost of the cement is taken into account.
- The loss/damage to consignments is higher if moved by rail.
- The Railways' customers do not get adequate information about the supply of wagons, their movement after loading and their expected arrival at the destination.
- In view of their insistence on trainload movements, the railways are not considered to have a wider reach than the roadways.
- The time taken by the Railways for settlement of claims is excessive causing dissatisfaction to its customers.
- The movement by rail involves multiple handling of cement consignments while the roadways provide door-to-door service.
- The railways do not cater to the requirements of small customers who have no option but to move their cement by road even over long leads.
- The Railways levy demurrage/wharfage on the consignments if these are not loaded, unloaded or removed from the railway premises within the free time allowed.
- The commercial rules of the Railways are complex, inflexible and are not interpreted properly by the railway staff.
- Siding and shunting charges, levied on railway siding holders for handling of wagons in the sidings, are considered as an unnecessary financial burden on the siding owners.
- The behaviour of the railway frontline staff is not friendly towards the customers.
- The condition of railway unloading terminals, approach roads and circulating areas is poor. These get worse in the monsoon seasons.

Opportunities

- Railways should design special wagons for movement of cement in bulk to the major cement consumption centres in the country.
- An emphasis, by Railways, on capturing the entire cement traffic, moving over long leads, is necessary because this segment can be moved, more economically, by rail.

- "Own Your Wagon Scheme" of the Railways can be made customer friendly in order to invite greater private participation in making more wagons available for loading cement traffic.
- To effectively compete with the roadways, the Railways should accelerate the provision of railside warehouses, built on railway land, with the help of government and private warehousing agencies. Such warehousing will reduce the landed cost of cement to the cement companies.
- Railways should adopt a flexible pricing system by making suitable changes in their rules.
- The strategy of granting Station-to-Station rates for individual streams of traffic,should be made more effective by full delegation of authority to the General Managers of the Zonal Railways.
- A large number of two point/three point combinations should be permitted from time to time keeping the pattern of demand for cement transportation in view.
- Due to the imposition of a restriction by a number of State Governments on the overloading of trucks beyond the carrying capacity of 9 tonnes for each truck, more traffic is being attracted towards railways. Railways should use this opportunity to attract additional cement traffic by adopting customer friendly strategies and by making sufficient number of wagons available for loading.
- Customers, having a monthly requirement of more than one thousand tonnes, should be specially segmented by the Railways for moving their cement requirements by rail as these customers prefer rail movement over road.
- The railway rules should be made more flexible and customer friendly. The frontline staff should be given more powers to redress a majority of the grievances of the customers. A number of customers are waiting for this improvement on to the Railways so that they can begin the movement of their cement requirements by rail.

Threats

- Competition is resulting in continuous loss of cement traffic to roadways over the past few years.
- The present infrastructure of inland waterways and coastal shipping system in the country is inadequate. Efforts to improve the system are on way. These

improvements can result in the Railways losing some more cement traffic for the North Eastern and some other regions to waterways.

- Planned development of national highways, on a large scale, will help heavy axle trucks to carry cement traffic, even over long leads, in competition with railways.
- The pricing policy of the roadways is highly flexible. The road hauliers can reduce their rates for carrying traffic in the empty direction of movement of trucks. The Railways, bound as they are by their rules, are not in a position to compete with roadways, in this respect.
- Railways have not been able to provide door-to-door delivery of cement traffic so far. Roadways, on the other hand, are working as total logistic providers.
- Due to the bureaucratic nature of its organisation, the Railways are not able to take prompt decisions and are, as a result, losing the goodwill of the customers.
- There are more cases of loss/damage to consignments moved by rail, thereby, causing dissatisfaction to the customers.
- Delayed settlement of claims is acting as an irritant to the customers of railways.
- Non-availability of forecast of supply of wagons for cement loading makes the distribution of cement by the cement companies difficult and uncertain.

CHAPTER VII

PROPOSED MARKETING STRATEGIES AND DIRECTIONS FOR FUTURE RESEARCH

The present marketing mix of the Indian Railway is not perceived to be friendly as well as optimal by the cement industry. The reasons for dissatisfaction of the industry with each element of the marketing mix have been discussed in chapter V. A summary of the findings and the conclusions emanating from these findings has been given in chapter VI. Based on these conclusions, the strategies that can be adopted by the Railways to attract more cement traffic by rail and thus improve the Railways' share in the total transportation of cement in India, can be suggested. Strategies have been suggested for each element of the marketing mix after analysing the views of the cement industry.

7.1 Pricing

The most important factor in the pricing strategy is the railway freight- from the loading station to the unloading station. As already explained, the cement industry is not taking the railway freight into account alone, while comparing the transportation cost with the roadways. They are taking the total delivered/landed cost for a particular dealer or a group of dealers, in a certain area, fed by a railway station/goods shed.

The total delivered cost includes the railway freight and:

i) Handling charges at the destination station.

ii) Secondary freight from the railhead to the dealer's premises.

iii) Demurrage, wharfage, shunting and other charges.

These costs are taken into account for comparing with the transportation cost by the Railways alone because the road movement does not involve these costs for the cement companies.

Our findings suggest that, for short lead destinations, the total landed cost is higher by about thirty percent for rail transportation as compared to the same for roadways. However, for other destinations, the Railways are costlier by about twenty percent.

Steps Taken by the Railways to Reduce Freight

a) As announced by the Minister for Railways, in the Railway Budget 2003-04, the Railways have taken some initiatives to reduce their freight rates by rationalising their rates in an effort become more competitive. Instructions have been issued by (Railway Board, 2003, Rates Instruction 11). Cement has been given a classification of 135 for 'trainloads' and 140 for 'wagons loads' as against class 140 and class 145 respectively in the previous year.

b) For short lead traffic, booked up to a di00stance of 100 kilometers, the charging of freight has been rationalised as under (Railway Board, 2003, Rates Instruction 11) :-

Distance Slab	Freight Concession
1-50 KMs	50%
51-75 KMs	25%
76-90 KMs	10%
91-100 KMs	0Nil

c) The "To Pay" surcharge on normal freight rate has been reduced from 10% (Ten percent) to 5% (Five percent) for booking of all commodities other than coal (Railway Board, 2003, Rates Instruction 11).

d) Approved comibinations of block rakes consigned to two destinations will be granted the benefit of "train load" rate for the entire distance of transportation on end –to-end basis (Railway Board, 2003, Rates Instruction 11)

e) It has been decided to permit clubbing of consignments through issue of a maximum of 12 (twelve) Railway Receipts for a broad gauge 8-wheeled wagon. (Railway Board, 2003, Rates Instruction 11). A documentation charge of Rs. 100/- per additional railway receipt shall be levied when more than one receipt is issued.

As a result of the above policy initiatives, the Railways have reduced the freight rates of cement to some extent. About four percent reduction has come as a result of the reduced classification of cement from class 140 to 135 (Railway Board, 2003, Rates Instruction 11).

The reduction in freight for short leads upto 75 kilometers, is not very significant for cementtraffic, because, according to our findings, there are, hardly, any destinations to which cement is moved by rail within a lead of 75 kilometers.

Granting of 'Train Load' freight for two point block rakes, for the entire distance of transportation on end-to-end basis, will reduce the total freight paid for such rakes by the cement customers to a small extent. This decision, however, fulfills a long pending demand of the cement industry and will help in attracting some more cement traffic for the Railways.

(a) **Station to Station Rates Scheme**

The Ministry of Railways has followed a strategy of granting concession on freight for cement traffic, on a case to case basis, by empowering the General Managers of the zonal railways to grant Station to Station rates concession on commodities, classified from class, 110 to class 135, up to a maximum of 12 per cent, on the incremental traffic which is, at present, not moving by rail. A benchmark has to be fixed for the rail user based on the traffic moved by rail by that user, for the last three years. Cement is classified by the Railways at class 135. Thus the zonal railways can offer a discount, upto 12 per cent to individual users to encourage movement by rail (Railway Board, 2002, Rates Instruction 36)

Rates Instruction 36 of 2002 requires the zonal railways to calculate the fully distributed cost of carrying the traffic by rail and ensure that there is an overall increase in the revenue earned from a particular rail user after the concessional freight has been allowed to him. Only in cases of idling of assets, can the zonal railways take the marginal cost as a basis for granting the concession within the overall ceiling of 10-12 per cent.

Thus, with effect from the financial year 2003-04, taking the freight reduction of about four percent due to reduced classification, the maximum freight concession for cement traffic, comes to about fourteen per cent for the retention of existing traffic and sixteen per cent for the incremental traffic:

The above railway freight rebate strategy has to be viewed in the light of our findings that the rail transport is costlier by 20 to 30 per cent as compared to road movement if the landed price of cement is taken into account.

We shall analyse what the Railways can do to bridge the gap between the maximum offer of freight concession by the Railways and the minimum concession that the Cement Industry would like to have to move cement by rail. The findings in Chapter V show that the total landed price of cement, including the

railway freight, is higher than the landed / delivered price of cement, if moved by road, to most of the destinations. However, the difference is more pronounced in cases of short lead movements upto 350 kms. For longer leads, the difference is less and, in a few cases, the Railways are, in fact, cheaper.

We can, therefore, conclude that it would not be advisable for the Railways to reduce the classification of cement any further, i.e. below the existing classification of 135. To give relief to the cement customers, in individual cases, the strategy of granting concession through the Station to Station Rates scheme is, basically, in order. This scheme delegates the powers of the Railway Board to the General Managers in order to give freight concession, up to a maximum of 10 per cent, for retaining the existing traffic. This limit of 10 per cent needs to be removed. Full powers should be delegated to the General Managers to grant concession under the Station to Station Rates scheme. The guidelines of the scheme, regarding recovering the fully distributed cost from the traffic, after the grant of concession, should continue in cases where concession is not being granted to avoid idling of assets. Where there is idling of assets, the Railways should recover, at least the marginal cost of transportation. For this purpose, the system of calculating the cost of rail transportation should be made uniform on the zonal railways by issuing detailed guidelines from the Railway Board.

The cement industry have pointed out that the Railways take a long time, in finalizing the requests for grant of concessional rates due to bureaucratic delays. Their suggestion that the concession should be applicable to the traffic offered by them, for rail movement, from the date they apply to the Railways, therefore, has a lot of merit and should be seriously considered by the Railways.

(b) **The Volume Discount Scheme**

This scheme, originally, issued under, Rates Instruction no. 91 of 2000, was again issued for the period 1/4/2001 to 31/3/2002 (in two halves) by the Ministry of Railways on 8.03.2001 (Railway Board, 2001, Instruction 25). However, this scheme was not favoured by the cement companies as it did not give any concession for retaining the existing traffic by rail unless, the consignor increased his traffic offered, by rail, by more than 5 per cent over the benchmark which is formed on the basis of highest level of cement traffic moved by rail over the past three years. Traffic moving under concession was not considered eligible for attaining the above condition of 5 per cent for calculation of incremental traffic on which the discount would be granted. The scheme, has therefore, not been

extended by the Railways beyond 31st March, 2002. There does not appear to be any need for extending this scheme, in future, as the cement companies also did not find it useful.

The Railway Board have now introduced an incentive scheme for the premier customers of the Railways, generating freight earnings of more than Rs. 25 crores per annum from the traffic originating from their private sidings. A rebate of 2 percent will be granted to such customers on every Rs. 5 crore of 'net' additional freight earnings over the preceding financial year. This rebate will be allowed in addition to any other freight concession availed by them. This scheme should be continued.

Handling Charges at the Destination Station and Secondary Freight

These two elements form a sizeable portion of the total landed price of cement if moved by rail. In a large number of cases, these elements add about a hundred rupees per tonne to the basic railway freight. These elements form about 25 per cent of the total landed price of cement. Our analysis, in Annexure 16, shows that the cost of handling of cement at the destination is a little less than half the cost of the two elements taken together.

The above two elements i.e. the handling charges at the destination and the secondary freight, can be reduced to a very large extent if the Railways provide warehousing facilities at the goods sheds/sidings. The Railways have taken an initiative for setting up privately managed terminals. They have also come up with another scheme for provision of warehousing near the common goods sheds. An official circular, regarding private terminals, has been issued by the Railways (Railway Board, 2001, letter dt. Aug.02) The Railway Board have issued another circular for the provision of warehousing facilities by the Central Warehousing Corporation Ltd. (Railway Board, 2001, letter dt.Jul.27). A pilot project by the Central Warehousing Corporation Ltd. (CWC) setting up a ware house in the railway area has come up at White field, (Bangalore). The Railways have decided to develop around 20 such terminals at different locations for handling commodities like cement, fertilizer etc. where CWC, has been asked to develop warehousing by entering into an agreement with the zonal railways.

The experiment of handling of this traffic at the Whitefield terminal, near Bangalore has been a success. Traffic handled at this terminal has gone up by 42.7 % within a period of one year in 2002-03 as compared to 2001-02 (SW

Railway, 2003, Statement dt. Sep. 08). This shows that the terminal has fulfilled a need of the industry, including the cement customers, and has also become popular. The Railways should continue this strategy and also increase the number of terminals where such warehousing is provided. The privately managed terminals would also be helpful in creating warehousing and providing the desired facilities to the cement customers. However, a pilot project planned for this purpose as Garhiharsuru, near Gurgaon (Haryana), has not yet started functioning. The success of this policy has, therefore, still to be gauged.

The provision of warehousing facilities will reduce the cost of handling at destinations and the secondary freight, for the cement industry by about 15%. The difference between road freight and the landed cost by rail mode has also ranged from 15 to 20% for the cement industry. The strategy of providing warehousing terminals is, therefore, very useful for the Railways and will make them compete better with the roadways, in the near future.

Siding and Shunting Charges

Siding charges are levied by the Railways on such wagons as are placed in the private/assisted sidings owned by the customers. Almost all old cement plants are served by private sidings, wherein, wagons/rakes are placed for loading. Most of the cement is loaded in bags, which are directly moved from the bagging plant, through conveyor belts and chutes, into the wagons. The bags are, then, manually, stacked inside the wagons. The time taken for loading a wagon is, therefore, directly, proportional to the speed of bagging.

The concept of siding charges is prevalent on the Indian Railways as each siding is connected to and is, served by a particular station. The Railways have been, so far, charging the freight only upto the serving station. The extra effort required for sending the wagons to the private siding and removing the same to the serving station, therefore, attracts additional charges which are known as siding charges. These charges are fixed by the Railways and are levied for handling of wagons inside the private siding as per the agreement signed between the Railways and the customer.

In most cases, the siding owners deploy their own locomotives also for movement of wagons from the serving station to the siding and back. In case, however, this work is to be performed by a locomotive owned by the Railways, shunting charges have also to be paid by the siding owner. These charges are

also fixed by the Railways and are based on the type of locomotive provided by the Railways, and the time taken for placement and removal of wagons from the siding to the serving station.

The cement companies, in the interviews held by me, and also in their representations to the Railways, are of the view that these charges increase their cost of rail transportation and make the rail alternative costlier.

The Railways have considered the views of the cement industry. They have a policy of treating the private sidings as terminals stations (Railway Board, 1993, letter dt.Oct.22). For such sidings, as are considered terminals, the freight is levied for the entire distance, up to the dead end of the siding, considering the siding as an extension of the serving station. This facility entails only a negligible amount of additional freight charges as compared to the siding and shunting charges, which are no longer leviable for sidings, which are, specifically, approved by the Railways for the grant of this facility. However, all cement sidings would not become eligible for availing this facility unless they are or remodelled to ensure direct reception/dispatch of the full rakes. The present layout of most of the old cement sidings will need to be suitably altered to avail of this facility.

The cement industry have demanded that the Railways should also share the financial burden for remodelling the sidings to receive/ dispatch and handle full rakes. So far, the Railways have not come up with a policy to this effect.

As a strategy, therefore, the Railways should weigh the likely benefits accruing to them in the form of additional traffic / revenue from each siding against the cost of sharing the remodelling expenses for that siding. The objective should be to develop a long term relationship with each siding owner for improving the rail share of cement traffic. If the benefits exceed the costs, the cost should be shared after examining individual cases.

Cost of Gauge Conversion, Electrification and Railway Staff Posted in the Sidings

The conversion of gauge and electrification of routes is an operational decision of the Railways. However, it affects the cement siding owners because, as per the Railways policy (Railway Board, 2000, letter dt. Sep.29) such cost should be borne by the siding owners. The Railways can pay for the cost of Railway electrification, if the siding owner is not agreeable to bear its cost and the traffic available from the siding makes the investment financially, remunerative,

giving a return of 14 percent on the investment made by the Railways (Railway Board, 2000, letter dt.Sep.29).

Gauge conversion, on the other hand, makes it difficult for the siding owners to dispatch their cement by rail from their sidings unless the gauge of the siding is also converted. Otherwise the traffic has to be loaded from the nearest goods shed. In either case, it involves extra cost to be borne by the cement siding owners.

The Railways should, therefore, review their policy on the above issues and have a dialogue with the cement industry in order and share the cost of gauge conversion on, mutually, acceptable terms. In fact, wherever, possible, the grant of the benefit of through distance till the dead end of the siding, the electrification and the gauge conversion should be discussed and decided as a package deal between the siding owner and the railway administration for each case so that the cost of remodelling, electrification and gauge conversion, wherever required, is shared by the two sides. However, the Railways should first of all decide, to have a policy for such cost sharing in principal.

Regarding the cost of operating, commercial and train examination staff being paid by the cement siding owners, the Railways have taken the initiative to reduce the strength of such staff in the sidings in a phased manner (Railway Budget 2003-2004). The view point of the cement industry that the Railways, and not the customers, should bear the full cost of such staff should be accepted by the Railways.

Demurrage and Wharfage Charges

Demurrage charges are levied on the wagons placed for loading as well as for unloading of consignments. If the consignments have been unloaded in the railway goods shed premises, wharfage charges are levied if these are not removed from the railway premises within the free time allowed by the Railways.

At the loading point, demurrage charges are attracted for extra detention to wagons in the cement sidings. Some of the reasons for extra detentions are, the limited loading capacity or speed of the loading arrangements in the cement plant and also the lay out of the siding. These arrangements, in most of the cement sidings, are quite old and investments are required for upgrading these, if the free time for loading, provided by the Railways, has to be attained. The Railways allow 10 working hours free time for loading of a rake of 40 eight wheelers covered

wagons with cement. The quantity of cement carried in these wagons is about 2300 tonnes. In other words, the loading arrangements, at the private siding, should be capable of loading more than 230 tonnes per hour if the shunting time for repositioning of the wagons at the loading platform is also taken into account. Most of the cement plants are taking about 24 hours to load the above quantity of cement, thus incurring demurrage charges for about 12 hours per rake.

A similar, situation prevails at the unloading points regarding the levy of demurrage charges. The unloading is done manually and the removal of the cement consignments is done by loading the bags into road vehicles.

The free time for removal of consignments is 12 working hours (Railway Board, 2000, letter dt.Oct.16). Wharfage charges, generally, do not get levied because adequate arrangements have been made by the cement industry, at the unloading points, for removal of the consignments.

Demurrage charges, at the loading points in the cement sidings, can be reduced to some extent by remodelling the siding lay out. For this purpose, the Railways should share the cost with the concerned siding owner after ensuring that the new layout and system of loading will result in loading at the desired rate. At the unloading points, which are mostly in the railway goods sheds, the Railways need to pay attention for providing proper approach roads and circulating areas in addition to the provision of covered sheds at the major cement unloading sidings. The new thinking on the Railways has already given an increased emphasis on the development of terminal facilities. More funds are also being allocated for this purpose. However, the cement industry is still not satisfied with the arrangements made at the unloading points. They feel that the Railways need to provide the above facilities at the terminals, immediately, to reduce levy of demurrage charges which impose extra cost on the cement industry. As the Railways will need some more time for improvement of the terminals, they will have to take a more sympathetic view of the problems faced by their cement customers while loading/unloading and removing the cement consignments, particularly, during the rainy season as well as in extreme hot/cold weather conditions.

Settlement of Claims

Cement Industry is finding it difficult to deal with the Railways for settling their claims. The time taken, by the Railways for this purpose, according to them, is very high. A large number of cases have also been filed by them in the Railway

Claims Tribunals because the delay in settlement is more than three years. This is an area that needs immediate attention by the Railways. The present system of settlement of claims involves fixing of inter-railway liability by the Railways in cases where claims of more than Rs. 25,000/- each have been lodged. A lot of time is consumed for fixing this liability. Only after this process, the finance Department of the Railways can give concurrence for settlement of claims. (Railway Board, letter dt. July 19).

As far as the rail users are concerned, delay in settlement of their claims results in their money remaining blocked. If the Railways accept the liability, the payment should be made immediately without waiting for the inter-railway liability to be fixed. The process of fixing of inter-railway liability can be completed even at a later stage because this is an internal matter for the Railways. This step, if taken by the Railways, will help in settling the claims faster and also reduce the need of the cement companies for filing cases in the Railway Claims Tribunals for settlement of their claims.

Rationalisation of Fares and Freights

Over the years, the increase in the passenger fares has not kept pace with the rising cost of the transportation. As a result, the passenger fares are highly subsidized. The loss on coaching services, in the year 2002-03 was of the order of Rs. 5609.15 crores (Railway Board, 2004, Railway Budget 2003-04). In addition, the loss on essential commodities carried below the cost of operation was Rs. 328.71 crores (Railway Board, 2004, Railway Budget 2003-04). The total loss, therefore comes to Rs. 5983.86 crores. The total earnings from goods traffic in the year 2002-03 were Rs. 26658 crores. If the passenger services and essential services were not carried below their cost, the Railways were in a position to reduce their freight on profitable commodities by about Rs. 6000 crores, that is, about 22.5 percent of the total revenue from freight traffic. Thus, if the Railways do not crosssubsidize the passenger traffic and the low rated essential commodities by charging higher freight rates on other profitable commodities like cement, they can bring down the freight by about 15 to 20%. This step alone, if taken, by the Railways, will make them more competitive and also attract additional traffic, like cement, giving more revenue. The railway fares and freight, therefore, need immediate rationalization to avoid diversion of cement and other high rated freight traffic to other modes of transportation.

7.2 Distribution

The qualitative feedback received from the cement industry shows that the reach of the Railways is not wide enough to compete with the roadways. Improvements are needed in the following areas:

Change of Destination

All freight customers of Railways have to fill up a form known as the Forwarding Note, for placing the demand/indent of a rake or wagons at the station where they want to load any commodity. Private sidings are also considered as a part of the station, which serves them. The Forwarding Note requires the customer to specify the destination to which the cement will be sent. Once, the demand for the wagons has been registered by the Station Master in the Priority Register, no changes in the particulars entered in this register are, normally, permitted by the Railways. This is because of the fact that the Priority Register, is a public document and the demands of various customers at the station are registered in a serial order as they come.

The change in destination, at times, requested by the cement companies and even other large customers should be permitted by the Railways by following and reiterating the instructions on the subject (Railway Board, 1981, letter dt.Apr. 16). It should, however, be seen that the changed destination does not fall in the zone of any operating restrictions imposed by the Railways due to operational reasons.

Minimum Number of Wagons to be Indented to Avail of the "Train Load" Freight Facility and the Concept of Mini Rakes

At present, the minimum size of the rake has been prescribed by railways to be of 38 BCN wagons. The maximum number of such wagons in a rake can be 40. Thus unless 38X58 (carrying capacity of a BCN Wagon= 58 tonnes) or 2204 tonnes of cement is available for a particular destination, the Railways will charge the entire consignment at the higher wagon load rate. For example, in the year 2003-04 for a lead of 450 kilometers, the difference in the two types of freight for transporting 2000 tonnes of cement will be about twenty seven thousand rupees.

To overcome this problem faced by the customers, the Railways have introduced running of 'Mini' Rakes which consist of a minimum of 20 BCN wagons and can be moved upto a maximum distance of 300 kilometers (Railway Board,

2001, letter dt.Sep.13) from the loading point to the destination at "Train Load" rates. However, no freight concession is available on cement moved as "Mini Rakes". This strategy of running 'Mini Rakes' has been quite successful in capturing short lead traffic for destinations where the market demands do not permit movement of full rakes of more than 2000 tonnes at a time.

However, this scheme can be availed of by only those customers who are dispatching more than 70% of their cement production by rail. This scheme is seasonal and is withdrawn by the Railways in the busy season from October to March every year. The cement industry have suggested that this movement should be allowed round the year upto leads of 500 kilometers. The Railways need to consider this demand from the industry's point of view and allow running of 'Mini Rakes' upto 400 Kms round the year to face the increasing competition from road transport.

Two/Three Point Block Rakes

The rake size on the Railways has increased, over the past few years, from 1400 tonnes to about 2300 tonnes – an increase of more than fifty percent in quantity. The cement industry would like to have more destination stations in the same distribution area. Thus the cement requirement for each destination, over a given period, has reduced, and, there is a need for handling smaller rakes of cement at greater number of points if the Railways have to improve their reach and retain cement traffic even at the present level.

Realising the above need of the cement industry, the Railway Board have issued a list of two point combination of destination stations (Railway Board, 2002, letter dt. Aug.05) for which the zonal railways can load train loads of cement, fertilizers, foodgrains etc.

Earlier the benefit of train load freight was given only upto the first point in the two point combination. Now the Railways have relaxed the above condition as a marketing strategy and have allowed the 'Train Load' freight rates upto the entire distance of transportation (Railway Board, 2003, Rates Instruction 11).

The cement industry has asked for more two point rake combinations to be allowed. The Railway Board have, however, advised the zonal railways to examine each request and permit loading for two points after getting concurrence from the railway on which the destination of the rake is situated. This decision of

the Railways has, therefore, met the needs of the cement industry only to some extent.

The Cement Manufacturers' Association has given a list, suggesting additional two point rakes combinations, to the Railway Board. It would be desirable for the Railways to permit some more two point combinations to the Cement Industry so that the diversion of the traffic to roadways can be reduced. In fact, the Railways should permit three point rakes for those destinations, which are, presently, being fed by road if the cement companies are willing to divert the traffic to rail. Such combinations, as are operationally convenient, should be accepted by the Railways with the benefit of 'Train Load' freight upto the entire distance.

Clubbing of Demands

Earlier 6 consignments were permitted to be clubbed in a Broad Gauge wagon. Keeping in view the demand of smaller customers, the Railways have now permitted clubbing upto 12 consignments in a wagon subject to the payment of documentation charges (Railway Board, 2003, Rates Instruction 11). This new strategy fully meets the demand of the cement industry in this respect.

Movement of Cement to North Eastern States

Railways have a number of operational constraints for movement of traffic to the North Eastern States. Within these constraints, they are moving the full requirement of foodgrains for the Public Distribution System on priority. The Railway Board had laid down quotas for movement of other traffic like sugar, cement, fertilizer and even public foodgrains. The roadways in these states, are also not well developed. The law and order situation in these States makes movement of commodities, by road, difficult.

Thus, while the Railways are not likely to lose this traffic to Roadways, the cement industry is looking upto the Railways to help them to meet the demand of cement in these States. The Railways have made efforts to move more cement to the North Eastern States. As a result, the movement of cement to the North-Eastern States has been permitted freely, with only a small portion remaining under quota restrictions.

Reduction in Transit Time to the Final Destination

The cement customers have stated that the transit time to the final destination of cement is more if moved by rail than the same if moved by road. Here, the final destination is the company owned stock yard/dealer's godown where the cement is stocked before it is sold to individual customers in that area.

For short leads upto 300 kilometers, the Railways are at a disadvantage as compared to roadways because the unit of transportation in railways is a train load which carries about 2300 tonnes. In the case of roadways, a truck which carries about 10 tonnes of cement, can move out as soon as it is loaded. Each railway rake is detained at the loading point after loading for about 24 hours as compared to a truck which can move out in about 4 hours time.

After arrival and unloading at the destination station, the cement consignments take another 10 hours for removal. The terminal detention of cement here is of the order of twenty four hours.

In the case of roadways, a truck can move directly to the company's stock yard/dealer's godown. Thus for short leads, road transport is faster as it takes less transit time.

The Railways can adopt a two-pronged strategy to reduce the transit time for short leads.

a) By developing railfed warehouses at the major unloading points. A policy circular to this effect has already been issued by the Railways (Railway Board, 2001, letter dt. July 27).

b) By asking the Container Corporation of India Ltd. (CONCOR), a subsidiary of Indian Railways, to serve as the marketing interface of the Railways. CONCOR should quote lump sums rates, per tonne of cement traffic offered, after assessing the various costs involved, and advise the Railways in this regard.

   The lump sum rates will include the element of rail freight and road bridging plus handling costs at both the ends. These rates will be quoted to the cement plants and, if acceptable to them, will be sent to the General Manager of the railways as laid down in the Indian Railways Act (Railway Act 1989). The Railway Receipt will be issued in the name of CONCOR for the rail transport portion of the inter modal package at the special rate approved by the railway. CONCOR, in turn, will issue the Combined Transport Document (CTD) to the cement plant for door to door delivery of

the cement transported. Thus the CONCOR will provide a single window system to the customer while the cement will be carried in railway wagons from the originating station to the destination station.

7.3 PROCESS

Delegation of Authority to the Frontline Staff

The Railway rules are inflexible as these do not allow much discretionary powers to the front-line staff who deal with the day-to-day problems of the customers. The main reason for the lack of discretion with the frontline staff at the field level is the bureaucratic nature of the organization. As the Railways are a Central Government undertaking, the staff dealing with the public and the customers in the field are not able to help the customers because they are having a feeling that they will be taken up if there is any deviation from the laid down rules and procedures.

This problem is more acute with the system of levying demurrage and wharfage charges at the loading and unloading stations. The rules regarding the free time allowed for loading and unloading are published by the Railway Board and no authority either in the zonal railways or in the divisions, has the discretion to make any changes in the allowed free time, even in the face of difficulties experienced by the customers due to one or more of the following factors :

a) constraints in the lay out of the private siding.
b) local weather conditions
c) the interruption in the supply line and
d) break down of the road transport system linking the railway stations with the final destination of the cement traffic.

As per rules in force, at present, demurrage is levied at the rate of Rs. 60/- per Broad Gauge eight-wheeler wagon for the first 24 hours, Rs. 90/- for the next 24 hours and Rs. 120/- per 24 hours for detention beyond 48 hours (Railway Board, 2002, letter dt. July 09).

Wharfage is levied by the Railways on consignments, which are not removed from the railway premises within the free time after unloading. The rates of these charges are laid down by the Railway Board. (Railway Board, 2000, letter dt. November 16). The powers for remission/write off the demurrage and wharfage charges have been delegated by the Board to the officers in the zonal railways (Railway Board, 1986, letter dt. Apr 23).

The Railway Board, however, have laid down certain guidelines for waival of wharfage and demurrage charges. The concerned officers have to keep the following factors in mind while doing so:

i) The need to sustain and attract traffic to the Railways and to assist in the marketing efforts.

ii) The nature and the value of the goods in relation to the freight and wharfage/demurrage dues.

iii) The local conditions of a particular station.

iv) Whether the circumstances under which the wharfage or demurrage charges accrued were really beyond the control of the consignor or the consignee.

v) The traffic handled at the goods shed, and bunching of traffic at the siding.

vi) Strikes/agitations etc. affecting the availability of labour/road vehicles.

According to the rules, the officers authorised to waive the demurrage/wharfage can do so upto 60% without recording specific reasons. However, if the waival is more than 60% in each case, speaking orders, for doing the same, are required to be passed by the concerned officer.

This procedure presumes that the consignor/consignee/their agent will approach the concerned officers located at the divisional headquarters, far away from the place where the loading/unloading has taken place. This causes difficulties to the customers who have to go from the goods shed to the divisional office and, in the some cases, to the zonal headquarters office to appeal against the decision of the lower officers, in order to get a higher percentage waival of wharfage/demurrage charges levied at the goods shed.

In order to make the system more user friendly, the following system is suggested for adoption by the Railways:

a) The senior supervisors at the loadiong/unloading stations should be given powers for waival of demurrage/wharfage charges. These powers should be sufficient to solve the problems of customers in, at least 50 percent of the cases. This will also ensure that a majority of the customers do not have to go to the divisional/zonal office for getting a waival of these charges.

b) The free time allowed for loading/unloading of consignments should be reviewed. The problems of the Cement Industry and other large

customers should be taken into account before taking any final decision in the matter.

c) The Railway frontline staff should have better customer orientation. They should inform the customers about the expected arrival and placement of their rakes for loading/unloading at the nominated stations. This will enable the customers to arrange for adequate labour/road vehicles and other infrastructure required for timely releasing/loading of the railway wagons.

d) Credit/Debit system of demurrage hours should be introduced at the cement loading as well as unloading points. This will ensure that the customers, who have been regularly doing well, do not get penalised if, due to certain reasons, railway wagons get detained or the railway ground space remains occupied for more than the permissible time. Such a scheme is already available on the Railways for the Steel Plants who make payment of demurrage on a periodical basis. In case they release certain trains/rakes in less than the free time allowed, they get credit hours to that extent. These credit hours are adjusted against the debit hours if the trains/rakes are detained by them in the same period. A similar facility should also be given to the cement industry both at the loading as well as unloading points.

e) The railway rules regarding levy/waival of wharfage/demurrage charges should be made easily available to the customers who need to be convinced that the rules are being applied uniformly and fairly to all customers.

Punitive Charges for Overloading Wagons

The cement industry feels that the provision of the Railway Act in this regard (Indian Railway Act, 1989) is harsh to them. This Act empowers the Railways to levy penalty charges at such rates, as prescribed, before the delivery of goods. The cement industry is, affected by section 73 of the Railway Act, particularly, in respect of coal consignments, which are received by them at their plants for manufacturing cement.

In the exercise of the above power, the Railway Board have issued instructions (Railway Board, 1997, letter dt. February 21) that the overloading of loose consignments by more than one tonne shall be charged at class rate 300.

This penalty is very heavy and is to be paid by the cement companies on the arrival of the consignment at the destination.

It is, therefore, suggested that the railway rules for levy of punitive charges for overloading a wagon should be reviewed so that the penalty levied for overloading of wagons is reduced to an extent that it serves the purpose for which it has been levied without being harsh on the customers. The main purpose behind the punitive charges is to avoid accidents due to overloading of wagons.

Maintenance of Railway Goods Sheds

Cement consignments, in train loads as well as in piecemeal, are handled at the railway goods sheds which are served by goods shed sidings taking off from the station yards. Some of the goods sheds have high level covered platforms where cement bags can be stacked after unloading. Till such time the bags are removed from the railway premises, the railway have to protect these from pilferage and damage by wet.

The feedback received by the cement companies suggests that, at most of the places, the Railways are not providing adequate, lighting, security and covered space for the cement consignments awaiting removal after unloading. The circulating area for the movement of trucks, deployed for transporting the consignments to the dealers' premises/stockyards, is also uneven and hampers speedy removal of the goods. Poor removal from the railway premises, coupled with damage and pilferage to the consignments, causes great dissatisfaction among the cement customers as they have to run around for waival of demurrage and wharfages and lodge claims against the railway for loss due to pilferage or wet. In addition, the capital value of goods thus damaged is blocked for long periods till the claims are settled. The demurrage and wharfage charges also add to the landed cost of cement. It has been estimated that this cost alone can go up to 75 paisa per bag of cement. If the cement company concerned does not pay this amount to its dealer, his commission on sales gets reduced by this amount. The dealer is, therefore, not keen to receive his cement requirement by rail. He would try to influence the cement manufacturer to send his consignments by road as such charges are not attracted as case of movement by road.

To minimise the dissatisfaction of the cement companies in this vital area, the Railway the following strategic decisions are suggested : -

a) Privatise the maintenance of circulating areas, and goods sheds so that adequate lighting, stacking space and security can be provided to the cement consignments stacked in the goods sheds.
b) The security of the goods sheds and mineral sidings should be entrusted to private security agencies.
c) The contracts for maintenance of goods sheds and circulating areas should be awarded and managed by the Commercial department of the Railways. The security contracts should also be managed by this department.
d) Adequate funds should be made available out of the revenue budget of the concerned zonal railway so that a proper standard of upkeep and maintenance of goods sheds and the circulating areas can be ensured. The Railways have already appreciated that the proper development and maintenance of the freight terminals is a basic requirement if the cement traffic has to be handled in the present competitive environment. A separate head should be earmarked in the revenue budget of each railways for the security, upkeep and maintenance of the goods sheds, their circulating areas and the approach roads.
e) More covered space/sheds and high level platforms should be provided where cement traffic is regularly handled. This will avoid damage to the cement consignments awaiting removal in the railway premises.

Delays in Decision Making Process

The cement companies have to wait for long periods for decisions from the Railways. The decision-making in following areas, in particular, affects the cement companies financially also.

Decision on Station to Station Rates

According to railway rules, the customers have to apply for cencessional station to station rates along with the relevant data and await the decision of the Railways in this regard. The cement companies are required to furnish details of the road rates for cement dispatched by road for each station along with the past-cement production data and the period for which the concessional rate is required.

The Railways verifiy the road rates given by the cement companies, and works out the cost of transporting cement for the destinations applied for. Normally, for this purpose, fully distributed cost is taken into account. This cost covers the fixed cost as well as the variable cost of rail transportation.

Cost analysis is done by the commercial department of Railways and is vetted by the finance department before it is put up to the General Manager of the railway for final approval.

The above process, in the present set up of the Railways takes a few months before the application of the customer is approved. In the meantime, the customer has to wait and send the existing traffic by rail, to the level of his commitment, without getting any concession till his request is approved.

The concessional rate, once granted, is applicable from the date of application by the customers, if the customer has applied for the concessional rate for a period of at least three months. In such cases, if the customers has fulfilled his commitment of dispatching cement by rail, on a quarterly basis, the concession can be given as a refund (Railway Board, 2002, letter dt.Sep 20).

Delay in the decision making process of granting concessional rates is causing dissatisfaction among the cement companies as they can not pass the benefit of concessional rate on their dealers without receiving the concession themselves. The delay also results in the blocking of their capital till the refund is granted for such cases.

The Railways should, therefore, evolve suitable machinery for taking expeditious decision on the request of the cement companies for grant of Station-to-Station rates. The entire process should be completed within a period of one month. The clarification, if any, required by the Railways should be sorted out by having meetings with the concerned cement companies so that the customer's point of view gets reflected and faster decision making becomes possible.

The Volume Discount Scheme

This Scheme (Railway Board, 2001, Rates Instruction 25) also laid down a detailed procedure to be followed by the zonal railways before a discount could be offered to the cement companies. The procedure, as laid down, caused delays on the part of the Railways. As a result, the cement companies and even other customer of the Railways, stopped applying for this scheme and preferred, in fact, to send their traffic by road. This scheme, therefore, has been dropped by the Indian Railways.

In the Railway Budget 2003-04, the Railways have come out with a new scheme for their Primary Customers whose net revenue from the originating traffic in a year is more than Rs. 25 crores. Such customers are given a discount of 2 percent on every Rupees 5 crores of net additional originating revenue given by

them to the Railways, irrespective of the benefit availed by them under any other concessional rates scheme. This new scheme should be marketed by the Indian Railways and should be allowed to continue because its operation will be simpler and will not involve delay in the decision making process.

Own Your Wagon Scheme

This scheme also did not get adequate response from the customers on account of

a) The delay in decision making by the Railways

b) Inadequate return on the investments made by the customers on the wagons owned by them.

c) Problems in collection of information required by the Railways before the scheme was approved.

The public lending rate has to be obtained from the State Bank of India while the information regarding the corporate tax has to be obtained from the Income Tax authorities. Since the rate of interest as also the corporate tax rates keep changing, the customers are finding it very difficult to obtain these details from the concerned authorities and then give these to the Railways to claim the lease charges due to them. (Railway Board, 2000, letter dt.June 29)

The decision making process on the Railways, in this respect, will have to be accelerated to reduce customer dissatisfaction.

Procedure of Allotment of Wagons

The allotment of wagons at all goods sheds and sidings on the Indian Railways is governed by the Preferential Traffic Schedule (Railway Board, 1994, General Order 78 dt. August 1). This schedule has been issued by the Central Government Under Section 71 of the Railway Act 1989. It lays down five priorities of traffic namely A,B,C,D and E. The details of the traffic and commodities covered under each priority are given in this schedule. For example, A priority, includes Military traffic sponsored by Quarter Master General's Branch through Milrail. This is the highest priority for allotment of wagons. Thus A priority is higher than B, B is higher than C and so on. Traffic which is not covered under priorities A to D is included in E priority which is the lowest.

Para 6.1 of the general instructions of this schedule lays down that it applies to the movement of traffic in wagons loads only. Programmed traffic ranks higher in priority over non programmed traffic within the same class of priority

irrespective of the date of registration. Also, block rake movements will get preference over piecemeal movements irrespective of the class of priority and date of registration. Any traffic, however, can be accorded preferential movement under a higher priority under special orders issued by the Ministry of Railways (Railway Board)/Zonal Railways. The above procedure of allotment of wagons is highly centralised, apart from its being complicated, in its application. The frontline staff have no discretion to change the priority of allotment irrespective of the urgency of a customer for dispatching his traffic. The staff are also not able to explain to the customers why the procedure of allotment is so complicated and why it leaves little discretion with them. As a result, customers of the Railways have to, invariably, approach the higher authorities in the divisional or zonal headquarters or even in the Railway Board, to find out why they cannot get allotment of wagons according to the schedule of dispatch that they have drawn up based on their commitments to their customers. Such a situation also arises, quite frequently, for cement manufactures when they want to dispatch their traffic in large quantities to areas which are not well served by roads. They face a situation of shortage of railway wagons in certain areas like Satna where empty rakes of covered railway wagons are difficult to get because of the unsatisfied demand of higher priority traffic like foodgrains for the Public Distribution System and the export traffic, in and around that area.

From the above facts, it is clear that the procedure for allotment of wagons was designed to meet a situation of shortages. The Railways have remained in this position for a long time. However, now the situation has changed. Faced with high railway freight rates and uncertainty in the supply of wagons, the cement plants, have diverted their traffic to roadways as road transport is cheaper and is easily available, involving few complications.

The procedure of allotment of wagons by the Railways is not customer oriented, as it does not meet their requirements. It is, therefore, suggested that the Railways should simplify the procedure of allotment of wagons and make it customer friendly so that is can take care of the changing needs of the cement companies as also of the changing marketing scenario for the Railways.

The Railways should plan their availability of wagon fleet in such a manner that there is no shortage of wagons when these are demanded by the customers. Only then can any marketing strategy to improve their share of loading in cement traffic can be effective.

Information about Supply of Rakes

As already discussed in the previous paragraphs, the allotment of wagons, for loading all commodities, including cement is governed by the Preferential Traffic Schedule. The cement manufactures are, therefore, not sure when a particular rake for a certain destination will be supplied by the Railways. They cannot plan their dispatches to their customers due to uncertainty in supply of wagons.

To solve this problem, the Railways should organize a system of giving advance intimation to the cement customers about the likely availability of wagons for loading. In fact, the pattern of supply of wagons/rakes for the next day is planned by the operating branch a day earlier in the Headquarters office and the same is discussed and finalised with the Divisions. The Divisions can intimate the supply plan to individual stations and also to individual customers.

This system, however, needs to be formalised as, at present, it is not obligatory on the part of Railways to inform their customers about even the approximate date and time of supply of rakes. To make it obligatory for the Railways to keep their customers informed of the likely supply of rakes will be a sound marketing strategy as it will help the customers as well as the Railways. The customers i.e. the cement companies, can plan their dispatches of cement properly while the Railways tend to gain by the reduced loading time and detention to the cement rakes. This strategy will improve the wagon turn round of the railway wagons while providing greater satisfaction to the cement companies.

A similar strategy should be implemented by the Railways at the stations where the cement traffic is unloaded. As most of the cement, at present, is unloaded from railway wagons by manual labour, it is essential that advance intimation about the arrival of incoming cement rakes is given to the cement companies to enable them to arrange for adequate labour and road vehicles for unloading and removal of cement consignments from the railway premises within the allowed free time.

Information about Cement Rakes in Transit

This information is essential for the cement companies for two reasons. Firstly, they would like to know about the consignments in transit to see if these are likely to reach the destination in the estimated time. Secondly, a particular unloading terminal may receive cement rakes from more than one source, at time, causing bunching of rakes at the destination station. In the first case, the cement

company would like to see that the consignments travel fast enough so that its capital does not remain blocked for an unduly long period. In the second case, if more that one rake/trainload of cement is reaching a particular railway terminal on the same day, the dealer/stockist will have to be advised to make arrangements for adequate labour and trucks for unloading all the consignments which are likely to be placed for unloading by the Railways on that day.

The current 'on line' position of the movement of each rake is now available with the Railways through the Freight Operations Information System (FOIS) which is a fully computerized, 'on line,' system. Terminals of the system are available at all major stations and yards on the Railways. In order to fulfill the need of the cement manufacturers about the 'on line' information on the cement rakes in transit, all major cement plant sidings should be provided with FOIS terminals. The Railways should provide these terminals as a marketing strategy to give better reliability and customer satisfaction about cement loading.

Delivery of Consignments on Indemnity Bond

The necessity for delivery of consignments on Indemnity Bond arises when the Railway Receipts are not produced by the consignee at the destination station. This happens due to delay in arrival of Railway Receipts by post or other means. In such cases, the consignments arrive earlier than the Railway Receipts and, as per the Goods Tariff, (IRCA, 1992, Goods Tariff), an Indemnity Note as per the format given at Appendix 1/II has to be filled (Form 1 or 1/A). Form 1/A is meant for consignments booked to self. It needs to be authorised by the forwarding station also, in addition to an endorsement to be made by the consignor on it. However, in case of other cement consignments, Form I is used. The Indemnity Bond has to be signed by the consignee, two witnesses and a surety. It has to be executed in the presence of the Station Master of the destination station. Before the consignee is allowed to sign the Bond, the Station Master has to obtain the permission of the Divisional Commercial Manager to allow delivery of the goods on Indemnity Bond. The Indemnity Bond has to be given on a stamped paper. The railway rules provide that delivery on Indemnity Bond should be provided only to reputed firms or customers.

Authorised dealers of the cement companies should, therefore, be allowed to avail of this facility. The formality of asking for a surety from the authorised reputed dealers of the reputed cement companies can be dispensed with to make

the procedure simpler. A general surety can be taken from the cement companies regarding their authorised dealers that in case of any problem arising after the delivery on the Indemnity Bond, the interest of the Railways shall be guaranteed by the cement companies. The general surety suggested above can be given by the cement companies for each dealer for a period of one year.

Non Availability of Door-to-Door Service

The Railway cannot reach the cement consignments to their final destination which is the dealer's godown or the company's stock yard or the customer's premises. The cement companies are, therefore, hesitant to use the Railways where they have an option to move the cement by road.

The Railways can adopt a new marketing strategies to overcome this handicap and compete with the roadways. As an immediate measure, they can ask the Container Corporation of India (CONCOR), a subsidiary of Indian Railways, to act as the marketing interface for the Railways. CONCOR can come up with a comprehensive inter modal package of door to door transportation. The transportation between the two rail heads will be by conventional railway wagons while the road bridging and handling at either end would be undertaken by CONCOR. CONCOR will assess the various costs involved and request he Railways for a special lump sum rate for the rail transportation segment. This rate can be examined and granted the General Manager of the railway under Section 32 of the Indian Railway Act.

As far as the cement companies are concerned, CONCOR will quote lump sump rates per tonne of traffic offered, to the cement companies. This rate will include the elements of rail freight and road bridging/handling cost at the terminals. The Railway Receipt (RR) will be made in the name of CONCOR at specially approved freight rates, for the rail transport portion of the inter modal package. CONCOR, however, will issue the Combined Transport Document (CTD) for door to door transportation for the cement customers. The customer will, therefore, get the benefit of a single window system.

Such an experiment has already been done on the South Eastern Railway, where the steel traffic from TISCO to Mumbai has been, moved, by CONCOR, directly to the customers, (Railway Board, 2001, Report of the Task Force on Steel, October).

Another strategy for providing door to door service is the construction of rail side warehouses by the Railways in collaboration with agencies like the Central Warehousing Corporation of India. By providing warehouses at the rail heads, the cement customer can store their cement after directly unloading from the wagons. This will save the secondary transportation charges which the cement companies and their dealers have to incur at present as the warehouse situated right next to the wagons placed for unloading. The details of the policy letter issued by the Railways are available (Railway Board, 2001, letter dt.July 27).

If the two marketing strategies detailed above are adopted by the Railways, the landed cost of cement for the cement companies will come down. At the same time, the adoption of these strategies will reduce multiple handling and also make the Railways compete better with the roadways.

Acceptance of Cheques by Railways

As per the Indian Railway Commercial Code (IRCC), the payment of railway freight is, normally, accepted in cash (Railway Board, 1991, Commercial Code Para 1201).. Reputed customers are allowed the facility to make payment by credit note cum cheque after verification of their standing by the Railways (Railway Board, 1991, Commercial Code Para 1202).. The problem, however, arises when the cement consignments are loaded on Sundays/holidays or on Saturdays after the banking hours, In such situations, the railway siding clerks posted in private sidings do not issue the railway receipts to the customers and also do not accept payments by cheque. Banks cannot issue drafts after the banking hours on Saturdays and Sundays/holidays. This results in the cement consignments getting held up after loading as the Railway Receipts are not issued.

A number of representations have been made by the cement industry to the Railways so that payment can be accepted, for the reputed siding holders, by cheques on all days of the week. The Railway rules in this regard, however, permit payment by cheques only when the customers have furnished a bank guarantee to the Railways amounting to 7 days' transaction to be based on the peak month's figure during the previous 12 month period for a particular customer. The Bank Guarantee has to be valid not only for the period of agreement between the railway and the consignor but also for a period of 6 months beyond it. (Railway Board, 2003, letter dt.June 06). The above arrangements are not

customer friendly as the cement companies, particularly at the loading points in the sidings, would like to make payment by cheques without furnishing any bank guarantee or a credit note to the Railways.

It is essential that the Railways should consider this request sympathetically. Reputed companies, having regular transactions with the Railways, at each station / siding, should be permitted to make payments by local cheques so that the delay in the realization of money does not take more than 2 to 3 days. However, in case of default due to bouncing of any cheque, there should be an agreement with the customer for payment of penal interest by him till such time the payment is cleared by the bank in favour of the Railways. As a step in this direction, the Railways have already opened their bank accounts in nationalized banks at a number of stations.

7.4 Product

Transportation is the product that the Railways sell in the market. Cement is moved by Railways in train loads only. Based on our findings, the cement transport product has to be modified by the Railways to suit the needs of the cement industry. Some of the modifications suggested by the industry are discussed here.

Availability of Rakes on Demand

Since the supply and allotment of railway wagons is done as per the Preferential Traffic Schedule, it is difficult for the Railways to supply wagons/rakes to any customer on demand i.e on the date and time that he would like. In fact, the Railways forfeit the registration fee of the wagons registered with them if the consignor does not load a rake supplied within ten days of the placement of the demand. This fee gets forfeited even if the consignor withdraws the demand within these ten days.

It has not been possible for the Railways to guarantee supply of rakes for cement loading exactly as per the requirement of the cement companies. In certain cases, the delay may be of the order of 2 to 3 days before a rake, for a particular destination can be supplied. In such cases, the cement manufacture may not have any other option but to dispatch the cement manufactured in the factory by road or stock it in his godown, thereby, incurring extra handling charges at the loading point itself. Such situation would also result in the blocking of the

capital of the cement company in the form of manufactured cement bags awaiting dispatch.

The Railways already have an 'Own Your Wagon scheme' which has been discussed earlier also. This scheme has not become popular with the customers because of a number of formalities, required by the Railways to be observed by the customers, in respect of getting certificates of medium term loading rate from the State Bank of India and that of corporate tax from the Income Tax authorities periodically. when they claim the lease charges from the Railways..

The solution, for the Railways, lies in changing this system of wagon supplies to take care of the peak demand. At the same time, supply of rakes to the low rated commodities should be reduced to the extent possible so that profit yielding commodities like cement can be given the full supply during peak demand season. This will reduce the dissatisfaction of the cement companies regarding the unreliability in the supply of railway wagons particularly during the period from October to March every year.

Carrying Capacity of Railway Wagons for Transporting Certain Commodities

The cement industry have given a feed back that coal loaded from Chircha collieries, Nandan Washeries and some other collieries in India can not be loaded upto the carrying capacity in open BOX/BOXN wagons. They have discussed the issue with the Ministry of Railways who have not taken any decision in the matter so far.

It is suggested that the Railways should take a decision in the matter at an early date so that this cause of dissatisfaction resulting in recurring loss to the cement companies can be avoided.

Movement of Cement in Bulk

Presently, most of the movement of cement whether by Rail or Road, is taking place in the form of bagged consignments. Bagging at the cement plants adds to the cost of cement. In case, cement can be utilized in bulk to form Ready Mixed Concrete, the cement bags need not be transported from the cement plant to the destination in all cases. The bagging of cement can be done, if necessary, at the destination station after receiving the loose cement in bulk. Bulk cement can be dispatched only in specially designed railway's tank wagons. Such wagons have already been designed and are in operation on the Central Railway where a bulk terminal has been set up by M/s ACC at Kalomboli near Mumbai.

Cement is pumped out from the tank wagons into the silos and is packed into bags to the extent required. Otherwise, it goes out as a part of the Ready Mixed Concrete directly to the construction site by road tankers.

Presently, the Railways have provided these facilities to the cement companies on the basis of full private ownership of the tank wagons by them and also construction of the handling siding at the unloading terminal at their cost. There is a lot of market potential for the transportation of bulk cement by the Railways, particularly, in large consumption centres like Delhi, Kolkata, Chennai, Banglore, Hyderabad etc. as supply of Ready Mixed Concrete is very helpful for the construction activities in the country.

The cement companies feel that the Railways should provide land on lease at the unloading points for developing the bulk cement handling facilities and also share the cost of construction of siding as also the dedicated wagons for the movement of cement. At present, the sidings are to be constructed at the cost of cement companies and the tank wagons are also fully paid for by them. A freight rebate of 22.5% is given to the cement companies by the Railways for transporting cement in such wagons. (Railway Board, 1995, letter dt.July 14).

It is suggested that the cost of the siding can be shared with the cement companies in order to encourage the development of more cement bulk terminals. The Railways should arrive at a minimum level of traffic which can be committed by the cement companies concerned so that the sharing of the cost of the siding at the unloading point becomes economical to the Railways.

Rakes Size Flexibility

The present minimum size of the rake as prescribed by the Railway Board is 38, eight wheelers wagons, each having a carrying capacity of about 58 tonnes i.e. about 2200 tonnes.

In order to attract more cement customers who have a monthly demand of about 1000 tonnes each, the rake size should be reduced to 35, eight wheeler wagons so that two such customers in the same area, can book their requirements in a 2 point rake combination. The Train Load freight facility should be available to both the customers because, the Railway Board have allowed this facility from the Budget 2003-04 for the entire distance of transportation on end-to-end basis (Railway Board, 2003, Rates Instruction 11). The facility of smaller rakes of 35 wagons can be allowed by the Railway as an interim measure after

detailed discussions with the Cement Industry so that Railway can revert back to existing load of 38 wagons i e 2200 tonnes each with in a specified period The cement companies can agree to develop loading and unloading facilities at the terminals for handling bigger rakes within this period

Segmenting the Long Lead Traffic

Long lead traffic, particularly, for leads beyond 500 kms should be identified by the Railways and targeted for 100 per cent movement by rail The Railways should give priority to attract this segment of traffic They should discuss the modalities with the cement manufacturers, case by case, to find out why a portion of this traffic is moving by road Station to Station rate concession can be given in individual cases, wherever, it is found that, by giving suitable concession, the traffic can be brought back to the Railways

Apart from segmenting the long lead traffic, the Railways should also become total transporters for cement, moving for such long leads as above The Container Corportation of India (CONCOR) should be involved to provide the road transport from the station to the dealer s premises by having an agreement with the cement companies The details have already been discussed in this chapter

Supply of Fit Wagons for Loading by Railways

At present, the Railways are supplying covered wagons for cement loading without ensuring that cement consignments, when loaded in these wagons, will not get damaged either due to contamination with the left overs of the previous consignments or get damaged in transit while on way to the destination This problem has caused a lot of dissatisfaction to the cement companies because the quality of the cement, delivered to their customers, get adversely affected The cement company also suffers financial losses due to deterioration in the quality of the cement delivered to it customers

It is, therefore, suggested that the Railways should permit about ½ hour extra free time for clearing at the loading points in the cement plants Since it will not be possible for the Railways to provide labour for cleaning the wagons, the job will have to be done by the cement companies when the wagons are placed for loading The additional free time given for this purpose, should act as an adequate incentive to the cement plants for undertaking this job However, the Railways should ensure that the wagons should be water tight Such wagons as are found to be non-water-tight should be rejected by the cement companies in

the presence and with the concurrence of the railway commercial staff posted in the sidings for supervising the loading of cement.

7.5 Physical Evidence

Physical evidence consists of two elements viz. the physical facility called the 'servicescape' and other forms of communication called the 'other tangibles. The servicescape further consists of the external facility and the internal facility. The servicescape usage in the Railways, involves both the customers and the employees. Thus Railways have to be an interpersonal service with elaborate complexity (V. Zeithaml, 1996)

We will first identify the servicescape and also the 'other tangibles' for the transportation of cement on the Indian Railways.

Servicescape

- *Facilities*

These include

(a) Signage.
(b) Parking.
(c) Landscape.

as external facilities.

and the terminals having

(a) The unloading space including covered and open.
(b) The circulating Area.
(c) The approach Road.
(d) Merchant waiting rooms.
(e) Goods office, its layout and design.
(f) Drinking water facilities for labour.
(g) Wagon / Rakes supplied for loading.
(h) Locomotives used for haulage of rakes
(i) The stations and yards leading to the sidings and the terminals where cement consignments are loaded and unloaded.
(j) Railway frontline staff at the stations and sidings.

as internal facilities.

Other Tangibles : These include

- Uniforms of the railway staff at the terminals and at stations enroute
- Railway Receipts.
- The Railway logo painted on the locomotives.
- 'Bholu – the Guard', a symbol of 150 years of Railways service to the nation.
- The name boards of the railway stations and yards.
- Display of daily operating restrictions for various destinations on the notice boards at the goods sheds/ sidings.
- Availability and display of important rules concerning cement loading at the goods sheds/sidings.
- Periodic updates about Railways and their tie up with other agencies to provide warehousing and total logistic support.
- Provision of FOIS terminals to keep the cement companies informed about their consignments dispatched by rail.

The purpose of physical evidence is to communicate with the customers so that the gap between the service delivery and external communication with the customers is reduced to a bare minimum. This is called GAP 4 (V. Zeithaml 1996).

The feedback, received from the cement companies, shows that the Railways have not been able to close GAP 4. In other words, their communication with the customers is inconsistent with the service delivery. This explains, why a number of cement companies have opined that they would like to transport their cement by road even if, for the same destination the rail freight is the same as the road freight.

Deficiencies noticed in the Service Delivery of the Railways:

(a) The signages and parking facilities at most of the goods sheds are inadequate. There has been little effort on the Railways to improve the landscaping of the terminals.

(b) The internal facilities like circulating area for movement of road vehicles, approach roads to the terminals, the unloading space (both covered and open) are not well maintained. The drinking water facilities at the goods sheds are either, inadequate or are missing. The design and layout of the goods sheds offices is not customer friendly. The goods shed premises are not well maintained. The wagons supplied for loading are not always clean and water tight. The railway staffs are not always in uniform. They don't,

generally, wear their name plates and badges showing their designation. Their uniforms are not well stitched and ironed and, mostly, the frontline staff do not look well groomed.

(c) The Railway Receipts are still written by hand in carbon process, as these have still not been computerized. Railway restriction bulletins and important rules are not, normally, displayed at the sidings and goods sheds. The rule books are old and sufficient copies of the latest rules books are not available.

(d) Freight Operations Information System (FOIS) terminals are still not available to the major customers, important goods sheds and sidings. Zonal railways do not issue any periodic updates about the developments on the Railways to keep their customers informed.

The above analysis of the physical evidence of the service provided by the Railways shows that there is a large gap between their service delivery and external communication with the customers. This gap (GAP 4) has to be closed by the Railways by taking necessary steps to improve their service delivery as well as their communication with their customers in the areas highlighted through the feedback received from the cement companies. The suggested strategies for improvement in each of the above areas have already been discussed under individual streams in this chapter.

7.6 People

The cement companies, their agents and dealers have to contact the railway front line staff particularly the commercial staff, when they have to load or unload cement consignments. The cement manufacturers, in the feedback received by us, have expressed their dissatisfaction in the following areas in which their contact with the railway is involved.

- Reliability of wagon supply
- Settlement of claims
- Flexibility in approach towards customers
- Interpretation of commercial rules to help the customers.
- Help in allotment of wagons/rakes by getting timely information about the wagon supplies.
- Information about receipt of inward loaded rakes at terminals, movement of rakes while these are on run.

- Unfriendly behaviour of the railway staff

The frontline railway staff and those supporting them from behind the scenes are critical to the success of the Railways because the customers see them as the railway organisation.

The feedback from the cement companies shows that there is a gap between the customer service standards laid down by the Railways and the service delivery. This is called GAP3 (Valarie A. Zeithaml, 1996). GAP3 is caused by

- Ineffective recruitment
- Role Ambiguity and Role Conflict
- Lack of empowerment and team work

The Railways should improve their recruitment and training procedures of frontline staff so that they are responsive to the needs of the customers. At present, a large number of employees is promoted from group D to group C and they form the frontline staff in the Railways. Such staff may not always have the requisite aptitude and training to provide the customer satisfaction and the service quality needed to serve the customers transporting cement by rail.

There is an urgent need to train and develop the frontline staff who ae promoted from group 'D' to group 'C' . The minimum educational qualification for recruitment to group 'D'-the lowest grade in the hierarchy, is that the staff should have passed eighth standard. Later on, by virtue of their seniority, such staff become eligible for promotion to group 'C' through a selection process. No doubt, such staff are trained in the railway zonal training schools and have to learn the rules and regulations of commercial working before they are certified fit for a working post in group 'C'.

For the past few years, the Railways have started training their frontline staff in their 'Customer Care Institute' at Delhi. The staff are trained to provide courteous and efficient service to their customers. An improvement in the general behaviour of the trained staff towards the customers, has been observed.

However, as the feed back suggests, the steps taken by the Railways, so far, are not sufficient to ensure that the staff develop a pro-active approach and provide better service quality to their customers.

It is, therefore, suggested that the Railways should review their recruitment policy. They should increase the percentage of well qualified employees recruited directly, and laterally, in group 'C' intermediate grades. Such employees can form the core group at each loading and unloading terminal for handling cement traffic in order to provide better service to the cement companies and their dealers.

Greater delegation of powers to the frontline staff is absolutely essential to make the staff effective in helping their customers and solving a majority of the problems on the spot. The Railways will, therefore, have to ensure greater delegation of powers to the frontline staff while, at the same time, developing the quality of these employees to serve the customers better.

7.7 Productivity and Quality of Service

The Railways are trying to keep their costs of transportation low by adopting a number of strategies. These include measures to optimise the utilisation of rolling stock and other fixed assets like the goods sheds. However, these measures affect the quality of service provided to their cement customers. The quality of service has the following five dimensions (Valarie A. Zeithaml, 1996).

- Reliability - Delivering on promise
- Responsiveness - Being willing to help/provide prompt service
- Assurance - Inspiring Trust and Confidence
- Empathy - Treating customers as individuals
- Tangibles - Representing the Service Physically

We have the feed back on the above dimensions from the cement manufacturers.

Reliability

Our feedback on reliability of rail transport of cement (Chapter V) indicates that it need improvement. Reliability can be improved by adopting the following strategies :-

a) Providing guaranteed supply of wagons for cement loading round the year. Each manufacturers can give a guaranteed minimum offering of traffic by rail. The railway should ensure that this quantity is moved to its destinations without fail.

b) Ensuring speedy transit of loaded wagons. At present, each railway rake has to wait for a locomotive to leave it to its destination. Sometimes, this wait can be sufficiently long to affect the delivery schedule of the consignor. Speedy transit can be achieved by better coordination with the consignors so that the rakes/trains loaded with cement can be moved as soon as these are ready.

c) The Railways should supply water tight wagons so that the cement bags do not get damaged enroute.

Responsiveness

Willingness to help and the promptness of service are important factors for the responsive service to the customers to be responsive. The findngs in this respect, have shown that the Railway frontline staff is not friendly. They are bureaucratic in their approach and have little discretion. Their service to the cement customers, therefore, cannot be termed as responsive.

In order to be more responsive to the needs of the customers, the Railways need to adopt the following strategies.

(a) Train their frontline staff to become responsive to the needs of the customers. In other words, the Railway need to do internal marketing to become responsive.

(b) Make the rules transparent and simpler for the customers so that they can understand and appreciate these.

(c) Greater empowerment of the frontline staff by delegating more discretionary powers to them. Empowerment of staff will reduce the bureaucratic delays that take place in solving the problems of cement customers.

Assurance

Assurance implies that the staff dealing with the customers belong to a reputed organisation and that they are skilled and knowledgeable so as to handle the problems of the customers effectively.

The Railways are, undoubtedly, a reputed transport organisation in the country. They also have skilled and knowledgeable employees. However, as discussed in Chapter VI, due to lack of discretion with them, they donot have a flexible approach.

For the cement companies to get an assurance of a good service, the Railways must make their rules more flexible and customer oriented. Greater discretion should be allowed to the frontline staff in dealing with the problem of cement companies.

Empathy

Empathy in the employees of the service provider, is essential as each customer has to be considered individually for solving his problems. To be empathic to the cement customers, the Railways will have to understand their special individual needs and anticipate their problems.

As, the present situation in the Railways is not upto the customers' expectation, the cement companies feel that the Railways do not provide the desired information in time; do not allow change of destination of cement consignments and take a long time to settle claims.

In order to be more empathetic to the cement companies, the Railways should:

a) Provide real time on line information about the cement consignments booked by rail. This provision is possible through the Freight Operations Information System (FOIS), which the Railways are installing all over their system.

b) Allow change of destination unless there are serious operational problems enroute for the destination in question.

c) Adopt strategies for quick settlement of the claims. The details of these strategies have already been discussed in this chapter.

Tangibles

The tangibles in rail transport of cement have already been discussed. These are the locomotives, wagons, railway staff in uniform, goods sheds, approach areas to the goods handling complexes and the offices of the frontline staff engaged in loading and unloading of cement consignments.

The strategies to make the service more tangible have already been discussed in this Chapter.

7.8 Promotion

Traditional promotional strategies of advertising and sales promotion are not so important for the marketing of freight traffic for cement transportation by rail

as the cement companies are few in number and they have been dealing with the Railways for a long time. What is needed is adequate publicity by the Railways about the customer friendly services that they are providing or are planning to provide. The cement manufacturers in the country are not many in number and it is not difficult for the Railways to communicate with them individually in order to mould the cement transport services to suit the requirements of the cement industry.

The problems of the cement industry, in this area, have been discussed in Chapter VI. The suggested strategies to overcome the problems are discussed below.

Provision of Information to Customers Through FOIS

The desired information can be given to the cement industry and their dealers through the real time on line. Freight Operations Information System (FOIS). A sub system of FOIS is the Terminal Management System (TMS). Terminals of FOIS and TMS should be provided by the Railways in the sidings of all major cement manufacturers. At major terminals, where cement is unloaded, TMS Computer terminals should be provided. These terminals will provide the requisite information about the movement of cement rakes to the industry.

The increase in size of the rakes has posed marketing problems for the cement industry as already discussed in this Chapter.. The minimum rake size should be reviewed by the Railways while balancing the economies of transportation and the requirements of the cement industry. This facility can be given for a limited period after discussion with the cement industry. During this period, the cement industry can remodel their sidings to load the normal size of the rake i.e. about 2300 tonnes within the normal free time offered by the Railways.

The facility of mini rakes and two point rakes as detailed earlier in this Chapter should be provided to the cement industry.

Demurrage and Wharfage Rules

Strategies for making changes in these rules have already been suggested. These changes will have to be made in consultation with the cement industry while keeping in view the interest of both the sides to optimise their resources.

'Engine-On-Load' System for Loading and Unloading Cement Rakes

This system has been promoted by the Railways to reduce detention to wagons and improve their turn round. The train locomotive is detained at the terminal till the loading or unloading operation, as the case may be, is completed. It has been presumed by the Railways that the cement industry will remodel their sidings for loading cement rakes and also develop other necessary infrastructure to load about 2300 tonnes of cement in five to six hours time.

However, this system has not taken into account the additional investments that the cement manufacturers will be required to make in remodelling their sidings and modifying their loading system to ensure loading/unloading in 5 to 6 hours time.

The Railways need to take the problems of the cement industry into account while attempting to optimise their wagon turn round. Adequate incentive should be given to the cement industry so that they can make additional investments. These incentives should include sharing the cost of remodelling the sidings by the Railways and improving the infrastructure for loading of wagons on terms mutually agreed between the Cement Industry and the Railways.

Warehousing and Terminal Facilities for Handling Cement traffic

Improvement to the existing unloading terminals on the railways has been discussed in the preceding paragraphs. The Railways need to adopt the strategies suggested, therein. The various aspects of providing warehousing at the rail head for unloading cement consignments have also been discussed. The strategy of providing warehousing facilities at the unloading terminals has been a success at Whitefield near Bangalore. The implementation of this strategy has economised the cost of rail transport to the cement industry by reducing the secondary freight charges substantially. The warehousing strategy, as a joint venture between the Railways and Central warehousing Corporation Limited, has been as success. The Ministry of Railways has decided to replicate the Whitefield experiment at a number of important terminals (Railway Board, 2004, letter dt. January 01). This strategy is well conceived and has been appreciated by the cement industry.

Modification of the Own Your Wagon Scheme

The scheme has not been popular with the cement industry. The reasons for the scheme, not being a success, have already been discussed in detail. The Railways need to modify this scheme to make it customer friendly by removing the irritants in the scheme.

Availability of Railway Rules and Procedures to the Cement Industry

In order to keep the confidence of the cement industry and to improve transparency in their working, the relevant railway rules and procedures must be available to this cement industry and their dealers. In fact, the railway should give adequate publicity to the rules and procedures, which are often needed by the customers. The rule books must be updated and new additions to the same must be published and widely circulated every year.

7.9 Directions for Future Research

The research on the present topic has brought out a number of areas , which need further investigation. These concern the various marketing strategies of the Indian Railways in transportation of cement. At the same time, these areas are also vital for the marketing of other commodities including those commodities which have got diverted to other modes of transport, particularly, the roadways, for movement by rail.

The marketing strategies of the Railways for the following commodities also need to be studied in detail :

- Petroleum Products
- Steel
- Coal
- Fertilizers
- Iron Ore for Export
- Raw Materials (like gypsum & limestone) for steel plants

The organisation set up of the Indian Railways also needs a detailed study. The areas which need study are :

- The change from the present organisational setup to a customer-focussed one
- Simplification of rules & procedures to make them customer-friendly.
- Ensuring availibility of rakes to the customers.
- Improvements in the internal marketing of the Railways.

- Recruitment standards and processes.
- Training modules and methods
- Strategies for improving employee productivity

At present, the Railways are facing a conflict between their social responsibility and the commercial nature of the organisation. The Railways subsidize passenger traffic by increasing the freight rates. They carry a number of commodities like salt, fodder etc. which do not even pay for the cost of transport. There are a large number of uneconomic branch lines, which the Railways have to operate as a part of their social responsibility. The losses on account of all the above services have already been quantified. The following aspects of this problem can be taken up for future research :

- How to make the uneconomic branchlines viable.
- The imperatives of subsidizing passenger traffic in the present socio-political set up.
- The management of change for the Indian Railways.
- Tariff rebalancing and quality enhancement strategies for improving the share of transportation of non-bulk commodities for the Indian Railways.
- Marketing strategies of Railways for integration of rail, road and sea movement in order to have a seamless chain of movement of freight traffic.
- Strategies for improving speeds of freight trains.

Thus a number of studies are required in the above areas if we want to take comprehensive steps to arrest the decline in the share of Railways as transporters of freight traffic.

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INTERVIEWS

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Annexure I/I

QUESTIONNAIRE FOR CEMENT DESPATCHES

PART I

(PERCEPTUAL & ATTITUDINAL)

Qualitative Dimensions

Q.1. Important Parameters in Cement Transportation

In Cement transportation, please rate the following parameters in the order of importance you attach to each one of them, (Use a scale of 1 to 5 where 1 stands for "least important" and 5 "most important")

Parameters	Ratings
1. Faster transit time	
2. Shipment tracking	
3. Loss/damage enroute	
4. Wide reach	
5. Claim Settlement	
6. Reliability	
7. Flexibility	

Q. 2. Comparative Attitudes of Consumers Towards Various Facets of Rail and Road Transport

Please rate the rail transport and road transport against each of the scales mentioned below:

(Please mark (x) for rail transport and (√) for road transport.

1. Reliability	1-------2---------3----------4----------5- Highly unreliable Highly reliable
2. Speed	1-------2---------3----------4----------5- Very slow Very fast
3. Flexibility	1-------2---------3----------4----------5- Very rigid Very flexible
4. Freight Charges	1-------2---------3----------4----------5- Very low Very high

5. Loss/damage enroute	1-------2---------3----------4----------5- Negligible Substantial
6. Information availability	1-------2---------3----------4----------5- Never on time Always on time
7. Reach	1-------2---------3----------4----------5- Very narrow Very wide
8. Claim Settlement	1-------2---------3----------4----------5- Very delayed Very prompt

Q.3. Consumer Preferences Towards Mode of Transport

Freight Charges being the same, which mode of transportation would you prefer for cement dispatch and why?

a) (i) Roadways ( ) (ii) Railways ( )

b) Give the reasons for your preference.

Q.4. Problem Areas in Rail Transport

On a day-to-day basis which areas of railway working do you find problematic. (Please indicate on a scale of 1 to 5 where 1 stands for 'least problematic' and 5 stand for 'most problematic'.)

Area	Rating
1. Taking allotment of indents/wagons on a day-to-day basis	
2. Little flexibility in changing destinations and products	
3. Not getting right kinds of wagons when required	
4. No knowledge of consignments after dispatch	
5. Marking sick after loading	
6. Wrong interpretation by commercial staff on train load freight.	

Q.5 Measures to Improve Railway Service

Below a number of steps are given which can be taken up by the railways in order to improve their service to its clients. You are requested to rate on a 5 point scale these steps in terms of importance and also in terms of priority. (1 least important and least / lowest priority whereas 5, denotes most important and highest priority respectively.)

Steps	Rating on importance	Rating on priority
1. Reduction in freight charges		
2. Reduction in minimum quantity of dispatch		
3. More number of two and three point rake combinations		
4. Prompt claim settlement		
5. Simplification of rules		
6. Designing specialized wagons		
7. Reduction in the transit time		
8. Any other (Please specify)		

Annexure II/II

QUESTIONNAIRE ON CEMENT DESPATCHES

(Part II)

Quantitative Dimensions

General Information about your cement plant

1. Name of plant
2. Location
3. Installed capacity
4. Whether a railway siding is available.

Q.1 Kindly indicate year wise production and dispatches.

Year	Production	Dispatch
1990-91		
1991-92		
1992-93		
1993-94		
1994-95		
1995-96		
1996-97		
1997-98		
1998-99		
1999-2000		
2000-01		
2001-02		

Q.2 Your cement plant functions on basis of the following distribution channels. Please make a mark (√) against the channel used.

1. Company owned stock/dump yards.
2. Dealerships
3. Direct to customers
4. Any other (Please mention)

Q.3 Please indicate your customers on the basis of products and tonnage demanded.

Tonnage/Month	Number	Total Tonnage	Preferred mode of Dispatch	Remarks
Less than 200				
200-500				
500-1000				
1000-1500				
1500-3000				
3000 and above				

Q.4 Kindly indicate your year-wise dispatches to different distribution channels.

Year	Stock Dump yard	Dealership	Direct parties	Any other
1990-91				
1991-92				
1992-93				
1993-94				
1994-95				
1995-96				
1996-97				
1997-98				
1998-99				
1999-2000				
2000-01				
2001-02				

Q.5 Please mention the Zone wise pattern of dispatch in the following format

Year	North	South	West	East
1991-92				
1992-93				
1993-94				
1994-95				
1995-96				
1996-97				
1997-98				
1998-99				
1999-2000				
2000-01				
2001-02				

Q.6 Please indicate the road and rail dispatches

Year	By Road	By Rail	Remarks
1991-92			
1992-93			
1993-94			
1994-95			
1995-96			
1996-97			
1997-98			
1998-99			
1999-2000			
2000-01			
2001-02			

Q.7 What are the components of your landed price by rail and road for three most important destinations in each of the four zones.

NORTH ZONE

	Destination#1		Destination#2		Destination#3	
	By Road	By Rail	By Road	By Rail	By Road	By Rail
Freight						
Handling at destination						
Demurrage and shunting						
Transhipment						
Secondary Freight						
Any other(s)						
Total						

SOUTH ZONE

	Destination#1		Destination#2		Destination#3	
	By Road	By Rail	By Road	By Rail	By Road	By Rail
Freight						
Handling at destination						
Demurrage and shunting						
Transhipment						
Secondary Freight						
Any other(s)						
Total						

WEST ZONE

	Destination#1		Destination#2		Destination#3	
	By Road	By Rail	By Road	By Rail	By Road	By Rail
Freight						
Handling at destination						
Demurrage and shunting						
Transhipment						
Secondary Freight						
Any other(s)						
Total						

EAST ZONE

	Destination#1		Destination#2		Destination#3	
	By Road	By Rail	By Road	By Rail	By Road	By Rail
Freight						
Handling at destination						
Demurrage and shunting						
Transhipment						
Secondary Freight						
Any other(s)*						
Total						

Annexure 2

LIST OF RESPONDENTS

S.No.	Name of Company	Location	Installed Productions Capacity (million tonnes) (Per Annum)
1	2	3	4
1.	Gujrat Sidhee Cement Ltd.	Sutrapada	1.2
2.	Century Cement	Baikunth	N.A.
3.	Madras Cement Ltd	Jayanti Purau	1.6
4.	Sri Vishnu Cement Ltd.	Sita Puran	0.6
5.	Manglam Cement Ltd.	Morak	1.4
6.	Associated Cement Ltd.	Lakheri	0.404
7.	Ambuja Cement Eastern Ltd.	Rawan (Raipur)	1.20
8.	ACC Tikaria , Cement Grinding & Packaging Plants	Tikaria Gauriganj	0.6
9.	Digvijay Cement Co. Ltd.	Digvijay Gram Sikka	1.075
10.	L&T Cement Ltd.	Rajula	5.0
11.	Saurashtra Cement Ltd.	Ranavav	1.2
12.	OCL India Ltd.	Raj Gangpur	1.0
13.	A.C. Cement Ltd.	Chitpur	N.A.
14.	Tata Chemicals	Mithapur	0.66
15.	The India Cement Ltd.	Talaiyuthu	1.44
16.	West Bengal Cement Works	Durgapur	1.0
17.	Ariyalur Cement Factory	Ariyalpur	0.55
18.	Madras Cement Ltd.	Allalliyur	2.0
19.	Birla Super Bulk TML	Dodda Ballapur	0.6
20.	Mysore Cement Ltd.	Ammasandra	0.57
21.	Sindri Cement works	Sindri	0.60
22.	Birla Corp. Ltd, Durga Cement works	Durgapur	0.60
23.	Maihar cement	Satna	2.0
24.	Vikram cement	Khor (Distt: Neemuch)	3.0
25.	Zuari cement ltd.	Yerraguntala	2.2
26.	Gujrat Ambuja	Bhatapara	1.0
27	Birla Cement works	Chittorgarh	2.0
28.	Binani Cement Ltd.	Binanigram, Sirohi (Rajasthan)	2.0
29.	Mancherial Cement Works	Adilabad (Andhra Pradesh)	0.335

Annexure 3

Importance Ratings of the Seven Variables on a Scale of 1 to 5 (Q 1/I).

Respondent Number	Faster Transit	Shipment Tracking	Loss/ Damage Enroute	Wide Reach	Claims Settle-Ment	Reliability	Flexibility
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1	5	3	5	3	5	5	-
2	3	4	3	2	3	4	4
3	5	1	4	1	3	4	3
4	4	-	3	-	1	5	2
5	5	1	3	3	3	5	5
6	4.5	2	4.5	4.5	3	5	3.5
7	5	3	5	4	1	5	2
8	4	3	3	4	5	5	4
9	3	1	2	1	1	3	3
11	3	2	4	2	1	1	1
12	5	3	5	4	5	5	4
13	5	-	5	-	5	5	5
14	5	2	5	3	5	4	4
15	5	3	3	5	3	5	5
16	5	3	5	4	5	5	5
17	5	-	5	5	5	5	-
18	5	-	3	4	4	5	3
20	5	5	5	5	5	5	5
21	2	2	5	4	4	4	3
22	3	-	5	3	4	4	2
23	3	5	2	3	2	3	5
24	2	2	5	5	4	4	5
25	5	5	5	5	3	5	5
26	3	1	1	4	1	2	1
27	3	-	4	4	1	4	1
28	5	5	5	5	5	5	5
29	5	1	5	3	5	5	5
No. of Respondents	27	21	27	25	27	27	25
Total	112.5	57	109.5	90.5	92	117	90.5
Avg. Score	4.2	2.7	4.0	3.6	3.4	4.3	3.6

The scores of the seven parameters have also been tabulated in the above Table.

Annexure 4

Rl.- Rail
Rd. – Road

Comparative Ratings of Rail and Road Parameters (Q 2/I)

Respon-dent No	Reliability Rl.	Rd.	Speed Rl.	Rd	Flexibility Rl.	Rd.	Freight Charges Rl.	Rd.	Loss/ Damage Enroute Rl.	Rd.	Information Availability Rl.	Rd.	Wide Reach Rl.	Rd	Claim Settle-ment Rl.	Rd.
1	2		3		4		5		6		7		8		9	
1	3	5	3	5	2	5	4	3	3	2	4	4	3	5	2	2
2	4	3	5	4	2	3	5	4	3	3	2	3	5	4	3	4
3	4	3	3	4	2	4	3	3	1	1	2	3	2	4	3	4
4	1	4	4	3	1	4	5	4	4	3	1	4	1	4	1	4
5	4	4	4	4	3	4	3	2	1	1	3	4	3	4	2	4
6	5	4	4	5	3	5	4	2	4	3	3	3	3	5	1	4
7	5	4	5	4	2	4	2	3	3	1	3	4	3	4	1	5
8	3	4	3	4	2	4	4	3	2	2	2	4	2	4	1	5
9	2	4	3	4	2	3	3	4	3	4	2	3	3	4	1	4
11	2	4	2	4	2	4	5	3	5	1	2	4	2	4	2	4
12	4	3	3	4	1	3	3	3	3	3	2	3	2	3	3	3
13	5	5	5	5	2	5	5	4	1	2	3	5	3	4	1	2
14	4	4	4	4	1	4	4	3	3	1	2	3	3	4	1	2
15	5	5	4	5	3	5	5	2	3	1	3	4	3	5	3	5
16	3	5	3	5	2	5	4	2	2	1	3	3	3	3	1	5
17	5	4	4	5	4	5	4	2	2	1	5	4	2	5	1	5
18	5	5	2	5	2	5	4	2	3	1	1	4	2	4	2	4
19	4	4	4	4	2	5	3	3	3	4	2	4	3	4	1	4
20	4	3	4	4	1	4	4	3	3	1	2	5	2	5	1	5
21	3	4	3	4	2	4	3	3	3	2	2	4	3	5	2	4
22	3	4	3	5	2	5	4	3	3	5	2	5	-	-	2	5
23	4	2	1	5	1	5	4	2	2	5	1	3	5	3	1	5
24	4	5	4	5	2	5	4	2	3	1	3	1	3	5	1	5
25	3	4	3	4	1	4	4	3	3	1	3	4	2	5	2	5
26	2	4	3	4	1	4	3	2	5	2	1	3	4	3	1	4
27	4	4	3	4	1	4	4	1	4	1	3	4	4	1	1	4
28	2	5	2	5	1	5	5	1	1	5	2	5	1	5	1	5
29	4	5	4	3	1	5	5	3	2	3	1	4	1	4	2	4
Number	101	111	95	121	50	122	110	75	76	61	65	104	73	110	44	126
of Resps	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
Average	3.6	4.0	3.4	4.3	1.8	4.3	3.9	2.7	2.7	2.2	2.3	3.7	2.7	4.0	1.6	4.5

Annexure 5

Preferred Mode of Transport (Q 3/I)

S.No.	Name of the Respondent	Mode Preference	Reasons
1	**2**	**3**	**4**
1	Gujrat Sidhee	Roadways	1. In time delivery 2. Point to point delivery 3. Customer Satisfaction
2	Century Cement	Railways	Faster
3	Madras Cement	Roadways	1. Economic 2. Door to door delivery for no extra charge.
4.	Sri Vishnu Cement Ltd.	Roadways	1. Less damage 2. Losses borne by transporters 3. No secondary freight 4. Wider reach
5.	Manglam	Roadways	1. Door to door delivery ➢ Smaller quantities transported 2. Wide reach 3. No Wharfage/Demurrage
7.	Ambuja Cement	Roadways	1. Smaller quantities moved 2. Door to door delivery ➢ Negligible damage/enroute ➢ Fast recovery of loss/damage ➢ Avoids multiple handling
8.	ACC Tikaria	Roadways	1. Door to Door delivery 2. No secondary handling 3. Faster 4. No labour problems 5. No loss of material due to hooks
9.	Digvijay Cement	Railways	1. Bulk cement can be dispatched in one go.
10.	L&T Cement Ltd.	No feedback	
11.	Saurashtra Cement	Roadways	20% to 30% lower freight than Railways.
12.	OCL India Ltd.	Roadways	1. Door to door delivery
13.	ACC Chitpur	Roadways	1. Door to door delivery 2. No. rake Load compulsion (Smaller quantities) 3. Diversion (Flexibility)
14.	Tata Chemicals	Roadways	➢ Faster delivery ➢ Door to door delivery
15.	India Cements	Roadways	1. Point to point Delivery (Door to door)
16.	L&T Durgapur	Roadways	1. No damage/loss enroute

Annexure 5

S.No.	Name of the Respondent	Mode Preference	Reasons
1	2	3	4
17.	Ariyalur Cement	Roadways	1. Extra cost of handling by rail 2. Loss/damage enroute higher by rail
18.	Madras Cement	Roadways	1. Door to door delivery 2. Faster transit 3. Flexible rates 4. Easy truck availability
19.	Birla Super	Roadways	1. Door to door delivery 2. Rehandling eliminated 3. Faster transit 4. Small quantities can move 5. Helps retain customers
20.	Mysore Cement	Roadways	1. No secondary freight 2. Door to door delivery
21.	Sindri Cements	Roadways	1. Door to door delivery 2. No cost due to secondary handling & transportation.
22.	Birla Corpn./DCW	Roadways	1.Small consignments can move
23.	Maihar Cement	No Response	
24.	Vikram Cements	Roadways	1. Faster transit 2. No secondary freight 3. No demurrage/wharfage 4. No risk 5. No loss/damage enroute
25.	Zuari	Roadways	1. Wide reach 2. Negligible damage 3. Flexibility 4. Quick Settlement 5. Freight payment time
26.	Gujrat Ambuja	Railways	-
27	Birla Cement Chitpur	Roadways	1. More economical as no secondary freight 2. No demurrage/wharfage 3. No damage/loss 4. No multiple handling 5. Faster 6. Door to Door delivery
28.	Binani Cement	Roadways	1. Highly reliable 2. Very fast 3. Very flexible 4. Prompt 5. Always in time
29.	Mancherial Cement	Roadways	Directly delivered at customers' site.

Annexure – 6

Problematic Areas (Q 4/I)

Respon-dent No.	Allotment of wagons	Changing Destination/ Products	Getting right kind of wagons	Post dispatch consignment information	Marking sick, post loading	Wrong Interpretation of Train Load Freight
1	**2**	**3**	**4**	**5**	**6**	**7**
1	5	4	2	1	1	4
2	4	3	4	3	2	1
3	1	3	1	3	1	1
4	1	5	2	4	3	1
5	1	2	1	1	2	4
6	2	3	5	4	3	3
7	3	5	3	1	1	2
9	3	5	2	3	1	1
11.	5	5	5	5	4	5
12.	3	3	1	3	4	3
13.	1	5	2	1	1	4
15.	1	3	3	3	1	1
16.	1	2	3	3	1	1
17.	0	0	0	0	0	0
18.	1	1	1	3	1	1
20.	3	4	4	4	4	4
21.	4	4	2	3	1	3
22.	1	1	1	2	1	1
23.	5	3	4	2	5	5
24.	2	2	4	2	1	3
25.	4	5	4	3	2	2
26.	4	1	1	3	1	2
27.	1	5	2	3	2	4
28.	5	4	4	5	2	1
29	5	4	4	5	2	1
Total	66	82	65	70	47	58
No. of Respon dents	25	25	25	25	25	25
Avg. Rating	2.6	3.3	2.5	2.8	1.9	2.4

Annexure 7

Measures to Improve Railway Service (Q 5/I)

Respondent No.	Reduce freight		Reduce Min. Quantity		More 2/3 point Rakes		Prompt claim Settlement	
	Importance	Priority	Importance	Priority	Importance	Priority	Importance	Priority
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
1.	5	5	5	5	5	5	5	5
2.	4	-	2	-	3	-	3	-
3.	5	3	2	2	3	3	1	1
4.	4	5	2	2	3	3	-	1
5.	-	5	-	5	-	5	-	3
6.	5	5	4	5	5	5	4	4
7.	2	2	1	1	5	5	4	3
8.	5	5	4	5	5	5	5	5
9.	4	5	3	5	5	5	5	5
11	5	5	5	5	4	4	5	5
12.	5	-	4	-	3	-	5	-
13.	5	5	5	5	5	5	5	5
14.	5	5	1	2	5	4	5	5
15.	5	5	1	1	5	5	3	3
16.	5	5	5	5	4	4	5	5
17.	5	1	1	1	1	1	1	1
18.	5	5	1	1	1	1	1	1
19.	2	2	2	2	4	4	5	5
20.	4	4	5	5	4	4	4	4
21.	2	4	1	1	4	4	4	4
22.	-	5	-	4	-	5	3	5
23	5	-	2	-	4	-	4	-
24	5	5	4	2	3	5	3	3
25.	5	5	5	5	5	5	5	5

Annexure 7

Respondent No.	Reduce freight		Reduce Min. Quantity		More 2/3 point Rakes		Prompt claim Settlement	
	Importance	Priority	Importance	Priority	Importance	Priority	Importance	Priority
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
26.	5	-	4	-	4	-	5	-
27	5	5	4	5	4	4	5	3
28.	5	5	5	5	5	5	5	5
29.	5	4	5	5	2	1	5	3
Total	112	100	78	84	101	97	905	89
No. of Respondents	26	24	26	24	26	24	25	24
Mean Rating	4.3	4.2	3.0	3.5	3.7	4.0	4.0	3.7

Respondent No.	Simplify Rules		Design Spl. Wagons		Reduce Transit		Others	
	Importance	Priority	Importance	Priority	Importance	Priority	Importance	Priority
10	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**
1	4	4	4	4	5	5	-	-
2.	4	-	2	-	2	-	-	-
3.	1	1	1	1	5	5	-	-
4.	5	4	-	-	2	-	-	-
5.	-	4	-	2	-	1	-	-
6.	5	4	4	4	4	4	5	-
7.	4	4	4	4	5	5	3	3
8.	5	5	5	5	4	5	-	-
9.	5	5	1	1	5	5	-	-

Annexure 7

Respondent No.	Simplify Rules		Design Spl. Wagons		Reduce Transit		Others	
	Importance	Priority	Importance	Priority	Importance	Priority	Importance	Priority
10	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**
11.	5	5	5	5	5	5	5	5
12.	4	-	4	-	5	-	-	-
13.	5	5	-	-	-	-	5	5
14.	5	5	4	3	1	1	-	-
15.	2	2	1	1	4	4	-	-
16.	5	5	1	1	2	2	-	-
17.	5	5	1	1	5	5	-	-
18.	1	1	1	1	4	4	-	-
19.	5	5	2	2	2	3	-	-
20.	4	4	-	-	4	-	-	-
21	5	2	4	2	2	2	4	4
22	-	5	4	-	3	-	5	5
23	5	1	1	-	2	-	More free time	
							3	-
							Wagon tracing	
							5	-
							Reliable Information	
							5	-
24	5	4	1	1	4		-	-
25.	5	5	1	1	4	4	More free time for unloading	
							4	4
26.	4	-	3	-	4	-	Staff Behaviour	
							5	5
27.	2	2	1	1	3	3	-	-
28.	4	3	3	3	4	3	-	-
29.	4	3	1	1	2	1		

ANNEXURE 7

Total	108	93	59	63	92	71		
No. of Resps	26	24	24	20	26	20		
Mean Rating	4	3.7	2.4	2.0	3.5	3.5		

Annexure 8

Additional Suggestions for Improving Railways' Service to Cement Companies

Respon-dent No.	Name	Suggestion	Import-ance	Priority
6	ACC Lakheri	➢ Prompt supply of wagons	-	-
7	Ambuja Cement, Raipur	➢ Easy availability of rules regulations and circulars	3	3
13.	ACC Chitpur	➢ Warehousing facility inside the unloading complex	5	5
21	Sindri Cements, Sindri	➢ More free time for loading Change monopolistic approach of staff	5 4	5 4
23	Maihar Cement Maihar (Satna)	➢ No shunting/ wagon checking by the Railways in the free time. ➢ Sealing of wagons ➢ Provide water tight wagons ➢ Efficient wagon tracing service ➢ Provide Reliable Information **Service levels** ➢ Knowledgeable staff ➢ Timely issue of railway receipts ➢ Empowered frontline staff ➢ Responsive staff ➢ Accessibility of officers ➢ No pressuring tactics ➢ Clear interpretation of rules Single window system for customers.	3 2 1 5 5 2 3 1 1 3 1 1 1	-

Annexure 8

Respon-dent No.	Name	Suggestion	Import-ance	Priority
25	Zuari Cement	➢ Increase in free time for unloading	4	4
26	Gujrat Ambuja Bhatapara	➢ Information cell ➢ Behaviour of front line staff ➢ Provide door to door service	- - -	- - -

Annexure 9

Despatches of Cement by Road and Rail (Q 1/II and Q 6/II)

YEAR 1991-1992 **(Lakh tonnes)**

Respondent No.	Total	Road	Rail	%age Road Share	%age Rail Share
1	6.1	3.1	2.6	51	43
3.	7.5	3.24	4.27	43	57
4.	5.9	4.17	1.83	68	32
5.	3.86	1.23	2.63	32	68
6.	3.22	0.42	2.80	13	87
7.	12.0	2.0	10.0	17	83
8.	1.75(98-99)	1.75	0	100	0
9.	7.8(94-95)	-	-		
10.	7.53(96-97)	7.53	0	100	0
12.	8.0(99-2000)	-		-	-
14.	3.2	2.4	0.8	75	25
15	8.4	5.9	2.5	70	30
17.	3.3	2.4	0.9	73	27
18.	4.63 (97-98)	-	-	-	-
19.	2.19(99-2000)	(Bulk Terminal)	-	-	-
20.	4.7	4.5	0.2	96	4
21.	2.4	1.5	0.9	63	37
22.	3.9(98-99)	2.1	1.8	54	46
23.	8.2	2.5	5.7	30	70
24.	19.2	9.3	9.9	48	52
25.	5.0	1.8	3.2	36	64
26.	11.4(98-99)	8.4	3.0	74	26
27.	11.2	5.3	5.9	47	53
28.	5.8	5.5	0.3	95	5
29.	3.1	1.5	1.6	48	52
Total	160.3	99.5	60.8	62	38

Annexure 10

Despatches Of Cement By Road And Rail **(Q.1/II & 6/II)**

Year 2001-02 **(Lakh Tonnes)**

Respon. No.	Total	Road	Rail	%age Road Share	%age Rail Share
1	7.4	6.2	1.2	8.4	16
3.	9.7	8.5	1.2	87	13
4.	6.0	5.8	0.2	97	3
5.	13.7	5.6	8.1	41	59
6.	5.6	0.5	5.1	9	91
7.	8.1	3.0	5.1	37	63
8.	7.2	7.20	0	100	0
9.	7.4	-	-	-	
10.	13.69	1369	0	100	0
12.	11.0	-		-	-
14.	2.2	2.2	0	100	0
15	10.5	8.8	1.7	84	16
16.	0.8	0.8	0	100	0
17.	4.2	3.9	0.3	93	7
18.	15.0	14.4	0.6	96	4
19.	5.13	Bulk Terminal	-	-	-
20.	3.0	3.0	0	100	0
21.	6.5	1.4	5.1	22	78
22.	5.3	3.1	2.2	58	42
23.	25.5	5.8	19.7	23	77
24.	25.9	10.9	15.0	42	58
25.	15.7	9.1	6.6	58	42
26.	12.3 (2000-01)	9.0	3.3	73	27
27.	18.4	14.2	4.2	77	23
28.	19.3	18.7	0.6	97	3
29.	2.1	1.8	0.3	86	14
Total	261.64	176.04	85.6	67	33

Annexure 11

Variation in Road/Rail Share During the Period 1991-92 to 2001-02(Q1/II)

Respondent No.	%age variation in Share	
	Road	Railway
1.	+30	-27
3.	+44	-44
4.	+29	-29
5.	+9	-9
6.	-4	+4
7.	+20	-20
8.	0	0
10.	0	0
14	+25	-25
15.	+14	-14
17.	+20	-20
20.	+4	-4
21.	-39	+39
22.	+4	-4
23.	-7	+7
24.	-6	+6
25.	+22	-22
26.	-1	+1
27.	+30	-30
28.	+2	-2
29.	+38	-38

Annexure 12

Comparative Rail Share of Total Dispatches of Old Cement Plants (Q 6/II)

(in Lakh Tonnes)

S.No.	Respon dent No.	1991-92					2001-02				
		Total Dispat-ches	Rail Share	%Age	Road Share	%Age	Total Dispat-ches	Rail Share	%Age	Road Share	%Age
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1.	1	6.1	2.6	43	3.5	57	7.64	1.2	16	6.44	84
2.	3	7.5	4.27	57	3.23	43	9.7	1.22	13	8.48	87
3.	4	5.9	1.83	31	4.07	69	6.0	0.20	3	5.80	97
4.	5	3.86	2.63	68	1.23	32	13.7	8.10	59	5.6	41
5.	6	3.22	2.80	87	0.42	13	5.6	5.10	91	0.50	8
6.	7	12.0	10.0	83	2.0	17	8.1	5.1	63	3.0	37
7.	15	8.4	2.5	30	5.9	70	10.5	1.7	16	8.8	84
8.	17	3.3	0.9	27	2.4	73	4.2	0.3	7	3.9	93
9.	20	4.7	0.2	4	4.5	96	3.0	0.0	00	30	100
10.	21	2.4	0.9	38	1.5	62	6.5	5.1	78	1.4	22
11.	23	8.2	5.7	70	2.5	30	25.5	19.7	77	5.8	23
12.	25	5.0	3.2	64	1.8	36	15.7	6.6	42	9.1	58
13.	27	11.2	5.9	53	5.3	47	18.4	4.2	23	14.2	77
14.	29	3.1	1.6	52	1.5	48	2.1	0.3	14	86	86
	Total	84.88	45.03	53	47	47	136.4	57.6	42	78.8	58

Annexure 13

Tonnage Demanded and Mode Preference (Q 3/II)

p.m. =per month

(figures in lakhs tonnes)

Resp. No.	No. of customers < 1500t p.m.	Total tonnage p.m.	Preferred mode of Dispatch	No. of customers= > 1500t p.m. or more	Total tonnage p.m.	Preferred mode of dispatch
1	2	3	4	5	6	7
3.	1256	6.0	Road	-	0.25	Road
4.	153	0.55	Road	2	0.06	Road/ Rail
5.	2050	1.20	Road/Rail	0	0	0
9.	500	0.89	Road	25	-	Road
10.	3071	1.10	-	7	0.56	Road/ Sea
12.	310	0.15	Road	0	0	0
13.	-	-	-	-	-	-
14.	-	-	-	9	-	Road
15.	-	-	Road	-	-	-
16.	-	-	-	702	1.0	-
17.	8	0.21	Road	6	0.3	Road
18.	-	-	Road	-	-	-
20.	299	0.142	Road	21	0.2	Road
21.	145	0.18	Road/Rail	11	0.5	Rail
22.	400	0.31	Road/Rail	8	0.19	Rail
23.	86	0.28	Road/Rail	40	2.10	Rail
24.	-	-	Road/Rail	-	-	Rail
25.	88 (upto 1000) tones each	4.0	Road	5	1.0	Road/ Rail (3000+)
27.	2713	1.5	Road/Rail (1000)	4	0.10	Rail
28.	130	0.55	Road	1	.02	Road

Annexure 14

Distribution Channelwise Despatches. (Q 4/II)

(Lakh Tonnes)

Resp. No.	1990-91 to 1995-96 Average Dispatches				1990-91 to 1995-96 Proportional Dispatches % age.				1996-97 to 2001-02 Average Dispatches				1996-97 to 2001-02 Proportional Dispatches % age.			
	Stock Yd.	Dealers	Direct	Total	Stock Yd.	Dealers	Direct	Total	Stock Yd	Dealers	Direct	Total	Stock Yd.	Dealers	Direct	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	1 05	-	2 81	3 86	27	-	73	100	1 65	-	4 56	7 21	23	-	77	100
3	5 42 (93-94)	2 28	0 9	8 6	63	27	10	100	4 2	4 2	1 1	9 5	44	44	12	100
4	2 67	2 83	0	5 5	49	51	0	100	3 1	4 1	0	7 2	43	57	100	100
5	-	-	-	-	-	-	-	-	-	-	-	-	43	42	15	100
6	3 07	0 16	0 03	3 26	94	5	1	100	4 15	0 21	0 039	4 40	94	5	1	100
7	7 01	0 75	2 38	10 14	69	8	23	100	8 08	5 05	0 70	13 83	58	37	5	100
9	-	-	-	-	-	-	-	-	-	-	-	82 9	-	-	100	100
10	-	-	-	-	-	-	-	-	6 13	4 43	2 51	13 07	47	34	9	100
14				2 5 (93-96)	-	-	-	-	-	-	-	2 84	-	-	-	-
15	5 6	2 7	1 09	9 39	59	29	12	100	3 6	2 7	0 8	7 1	50	38	12	100
17-	-	0 6	3 0	3 6	-	17	83	100	-	1 26	3 46	4 72	-	27	73	100
18	-	-	-	-	-	-	-	-	2 3 from (97-02)	7 03	0 34 from (00-02)	9 67	24	73	3	100
20	-	3 8	1 18	4 98	-	76	24	100	0 6 from (99-02)	3 29	0 63	4 52	13	73	14	100
21	2 08 from (94-96)	0 2	0 6	2 88	72	7	21	100	3 7	0 52	0 42	4 64	79	11	10	100
22	-	-	-	-	-	-	-	-	2 40 from (98-02)	1 36 from (99-02)	1 27 from (98-02)	5 03	48	27	25	100

Annexure 14

Resp. No	1990-91 to 1995-96 Average Dispatches				1990-91 to 1995-96 Proportional Dispatches % age				1996-97 to 2001-02 Average Dispatches				1996-97 to 2001-02 Proportional Dispatches % age			
	Stock Yd	Dealers	Direct	Total	Stock Yd	Dealers	Direct	Total	Stock Yd	Dealers	Direct	Total	Stock Yd	Dealers	Direct	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
23	-	-	-	-	-	-	-	-	13 49 from (97-02)	-	8 59	22 08	61	-	39	100
24	-	-	-	-	-	-	-	-	22 4	-	1 17	23 57	95	-	5	100
25	-	-	-	-	-	-	-	-	9 54 from (99-02)	2 08	12 13	23 65	40	8	52	100
26	-	-	-	-	-	-	-	-	14 4 from (98-02)	-	-	14 4	100	-	-	100
27	7 5	3 3	1 16	11 96	62	28	10	100	11 1	3 5	1 39	15 99	69	21	10	100
28	-	-	-	-	-	-	-	-	10 6 from (97-02)	3 5	0 9	15 0	70	23	7	100

Annexure 15

Zonewise Pattern of Cement Dispatches (Year 1991-92 to 2001-02) (Q 5/II)

Percentage

Resp. No.	Location (Zone)	Despatch Zone								Remarks
		North Percentage		South Percentage		West Percentage		East Percentage		
1	2	3	4	5	6	7	8	9	10	11
		91-92 to 95-96	96-97 to 01-02	91-92 to 95-96	96-97 to 01-02	91-92 to 95-96	96-97 to 01-02	91-92 to 95-96	96-97 to 01-02	
1	West	2	0	-	4	98	96	-	-	Shift towards road
3	South	7	4	80	96	1	0	3	2	
4	South	7	4	80	96	0	0	13	0	
5	North	100	100	0	0	0	0	0	0	
6	North	100	100	0	0	0	0	0	0	
7	West	-	4	-	4	-	62	-	30	
10	West	-	100	0	0	0	0	0	0	
15	South	0	0	100	100	0	0	0	0	
16	East	0	0	0	0	0	0	0	100	Recent shift towards Rail
17	South	0	0	100	100	0	0	0	0	
18	South	0	0	0	100	0	0	0	0	
19	South	0	0	0	100	0	0	0	0	
20	South	0	0	100	100	0	0	0	0	
21	East	0	0	0	0	0	0	100	100	
22	East	0	0	0	0	0	0	100	100	
23	East	21	20	0	0	0	5	79	75	
24	West	-	91	-	0	-	9	-	0	
25	South	0	0	99	99	1	1	0	0	
26	East	-	0	-	0	-	0	-	100	
27	West	82	81	0	0	18	19	0	0	
28	West	-	46	-	-	-	54	-	-	Shift towards Road
29	South	3	0.3	62	72	33	15	2	12.7	

Annexure 16

Comparative Landed Price by Rail and Road (Q 7/II)

Price : Rupees Per tonne
Sec = Secondary

Rail								Road					Difference	
Resp. No.	Destination	Freight	Handling at Destination	Demurrage	Sec. Freight	Others	Total	Freight	Handling at Destination	Sec. Freight	Others	Total	Total	Percentage
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
1	1	479	100	0	100	10	689	417	50	-	5	472	217	+46
	2	410	100	0	100	10	670	393	50	-	5	448	222	+50
	3	810	100	150	250	20	1230	950	0	0	0	950	280	+29
3	1 S	386	40	0	35	5	466	439	0	0	0	439	27	+6
	O													
	2 U	448	34	0	55	8	545	623	0	0	0	623	78	+14
	T													
	3 H	302	36	0	35	8	380	262	0	0	0	262	118	+45
	1 E	733	65	0	54	0	852	602	45	20	0	667	185	+28
	A													
	2 S	602	45	0	20	0	667	775	0	0	0	775	108	-14
	T													
4	1	440	46	2	94	53	635	570	0	30	0	600	35	+6
	2	675	42	2	42	53	814	838	0	0	0	838	24	-3
	3	502	36	2	31	53	624	634	0	0	0	100	93	+93
5	1	117	25	3	48	0	193	100	0	0	0	100	93	+93
	2	285	36	3	60	0	384	270	0	0	0	270	114	+42
	3	464	73	3	60	0	600	600	0	0	0	600	0	0

Annexure 16

Rail								Road					Difference	
Resp. No.	Destination	Freight	Handling at Destination	Demurrage	Sec. Freight	Others	Total	Freight	Handling at Destination	Sec. Freight	Others	Total	Total	Percentage
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
6	1	371	80	0	100	18	589	425	20	40	0	485	104	+21
	2	370	53	0	80	18	522	425	20	40	0	485	37	+7
	3	255	60	0	100	13	429	275	20	40	0	335	94	+28
7	1	633	35	5	150	8	831	1100	15	0	0	1115	284	-25
	2	587	35	5	150	8	785	850	15	0	0	865	80	-9
	3	448	35	5	150	8	646	700	15	0	0	715	69	-10
8	1	-	-	-	-	-	-	-	Direct Sale		-	-	-	-
9	1	-	-	-	-	-	553	-	-	-	-	345	208	+60
	2	-	-	-	-	-	585	-	-	-	-	334	251	+75
	3	-	-	-	-	-	633		-	-	-	421	212	+50
15	1	-	-	-	-	-	680	-	-	-	-	688	8	-1
	2	-	-	-	-	-	497	-	-	-	-	570	73	-13
	3	-	-	-	-	-	593	-	-	-	-	660	67	-10
16	1	117	60	0	22	40	239	105	38	0	10	153	86	+55
	2	152	25	0	21	38	236	105	63	0	8	176	60	+34
	3	117	58	0	27	40	242	166	32	0	10	208	34	+16
17	1	-	-	-	-	-	257	-	-	-	-	351	-	-
	2	-	-	-	-	-	129	-	-	-	-	214	-	-
	3	-	-	-	-	-	257	-	-	-	-	332	-	-
18	1	527	80	0	100	22	729	666	0	0	0	662	67	+10
	2	432	100	0	100	20	654	554	0	0	0	554	98	+18
	3	502	78	0	100	24	704	635	0	0	0	635	69	+11

Annexure 16

Rail								Road					Difference	
Resp. No.	Destination	Freight	Handling at Destination	Demurrage	Sec. Freight	Others	Total	Freight	Handling at Destination	Sec. Freight	Others	Total	Total	Percentage
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
19	100% by Road							(Bulk Terminal)						
20	Dispatch mostly by Road													
21	1	99	80	0	125	0	304	120	15	0	0	135	205	+152
	2	164	80	0	145	0	389	360	15	0	0	375	14	+4
	3	176	85	0	90	0	351	300	15	0	0	315	36	+11
23	1 N	675	80	0	100	0	855	830	25	30	0	885	30	-3
	O													
	2 R	532	80	0	100	0	712	650	25	30	0	705	7	+1
	T													
	3 H	548	80	0	100	0	728	590	25	30	0	645	83	+13
	4 C	171	80	0	100	0	351	190	25	30	0	245	106	+43
	E													
	5 N	325	80	0	100	0	505	380	25	30	0	435	70	+16
	T													
	6 R	202	80	0	100	0	382	240	25	30	0	295	87	+30
	A													
	L													
	7 W	409	80	0	100	0	589	490	25	30	0	545	44	+8
	E													
	8 S	610	80	0	100	0	790	570	25	30	0	625	165	+26
	9 T	494	80	0	100	0	674	600	25	30	0	655	19	+3
	10E	456	80	0	100	0	636	500	25	30	0	555	81	+15

Annexure 16

Rail								Road					Difference	
Resp. No.	Destination	Freight	Handling at Destination	Demurrage	Sec. Freight	Others	Total	Freight	Handling at Destination	Sec. Freight	Others	Total	Total	Percentage
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	A													
	11S	386	80	0	100	0	566	410	25	30	0	465	101	+22
	12T	317	80	0	100	0	497	340	25	30	0	395	102	+39
24	1 N	510	17	19	173	16	735	520	2	0	8	530	205	+13
	O													
	2 R	409	20	4	120	16	569	430	2	0	1	433	136	+31
	T													
	3 H	463	25	4	35	4	528	460	5	0	6	471	57	+12
	4 W	332	32	0	13	0	377	340	7	0	0	347	30	+9
	E													
	5 S	392	34	0	12	0	438	420	10	0	0	430	8	+2
	6 T	480	46	0	26	0	552	510	11	0	0	521	31	+6
25	1 S	409	48	0	84	25	607	390	16	84	0	490	117	+24
	O													
	2 U	502	46	0	140	25	713	550	15	60	0	625	88	+14
	T													
	3 H	739	126	0	214	25	1104	810	44	68	0	922	180	+20
26	1	304	79	3	170	16	572	350	18	0	0	368	204	+55
	2	578	82	3	120	16	799	630	18	0	0	648	151	+23
	3	815	106	3	120	16	1060	850	40	0	0	890	170	+19
27	1 N	471	37	2	40	46	596	460	31	0	0	491	105	+21
	O													

Annexure 16

Rail								Road					Difference	
Resp. No.	Destination	Freight	Handling at Destination	Demurrage	Sec. Freight	Others	Total	Freight	Handling at Destination	Sec. Freight	Others	Total	Total	Percentage
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
	2 R	517	26	2	20	42	607	460	22	0	0	482	125	+26
	T													
	3 H	791	35	2	20	5	853	600	22	0	0	622	231	+37
	4 W	302	18	2	25	42	389	355	14	0	0	369	20	+5
	E													
	5 S	363	18	2	77	42	502	390	15	0	0	405	97	+24
	6 T	194	20	2	30	42	288	225	15	0	0	240	48	+20
28	1 N	579	75	3	67	0	724	610	21	0	0	631	93	+15
	O													
	2 R	610	75	2	48	0	735	620	21	0	0	641	94	+15
	T													
	3 H	610	75	2	47	0	734	615	21	0	0	636	98	+15
	4 W	332	75	3	23	0	433	310	25	0	0	335	98	+29
	E													
	5 S	309	75	3	49	0	438	375	25	0	0	400	38	+10
	6 T	409	75	3	47	0	534	475	27	0	0	502	32	+8

Annexure 17

List of Destinations for Comparative Landed Price (Q 7/II)

Respon dent No.	From		To		Remarks
	Zone	Station	Zone	Destination	
1	2	3	4	5	6
1	West	Sutrapara	West	1. Mehsana 2. SRKJ 3. Jogeshwari	-
3.	South East	Jayanti Puram	South	1.Hyderabad 2. Vizag 3. Chennai 1.Bhubaneswar 2. Behrampur	-
4.	South	Sitapurah	South	1. Chennai 2.Salem-Marnd 3. Katpadi	-
5.	North	Morak	North	1. Kota 2. Jaipur 3. Delhi	-
6.	North	Lakheri	North	1. Delhi 2. Ghaziabad 3.Jamuna Bridge	-
8.		Gauriganj	North	-	-
9.	West	Sikka	West	1.Ahmedabad 2. Nadiad 3. Baroda	-
10.	West	Rajula	West	-	-
11	West	Ranavav	West	-	Railway Freight 20-25% higher on longer routes & 30 to 40% on shorter routes.
15	South	Talaiyuthu	South	1. Kalamashi 2. KYJ 3.Kottayam	-
16	East	Durgapur	East	1. Burdwan 2. Bankura 3. Sainthia	-
17	South	Ariyapur	South	1. Madras 2. Villupuram 3. Vellore 4. Palghat 5. Calicut 6. Ellur	Incomplete Data
18.	South	Allalliyur	South	1.Kannur 2. Ernakulam 3. Kottayam	-
19.	South	Doddaballapur	South	-	-
20.	South	Ammasandra	South	-	-
21.	East	Sindri	East	1. Dhanbad 2. Koderma 3. Deoghar	-
22.	East	Durgapur(L&T)	East	-	-

Annexure 17

Resp. dent No.	From		To		Remarks
	Zone	Station	Zone	Destination	
1	**2**	**3**	**4**	**5**	**6**
23.	North	Satna	North	1. Delhi 2. Agra 3.Bareilly	-
	Central		Central	1. Jabalpur 2 . Kanpur 3. Iradatganj	-
	West			1. Bhopal 2. Indore 3. Khandwa	-
	East			1. Deoria 2. Mau 3. Varanasi	-
24.	North	Neemuch	West	1. Delhi 2. Narnaul 3.Yamuna Bridge	-
	West		West	1.Himmatnagar 2.Ranchi 3. Surat	
25.	South	Yerraguntala	South	1. Bangalore 2. Mysore 3. Kalamashi (KLHI)	-
26.	East	Sankrail	East	1. Sambalpur 2.New- Jalpaiguri 3.New-Guwahati	-
27.	North	Chittor	North	1. Delhi 2. Hissar 3. Kotkapura	-
	West		West	1.Himmatnagar 2.Ahmedabad 3.Ratlam	
28.	West	Binani	West	1 Jaipur 2. Baroda 3. Surat	-
29.	-	Mancherial	South	-	-

Annexure 18

Interviews/Seminars/Conferences

Interviews

Date	Interviewee
26.12.2002	Shri R. Parthasarthy Ex. Secretary General, Cement Manufacturers' Association, New Delhi
11.3.2003	Shri Vivek Agnihotri, Vice President (Marketing) ACC Ltd., New Delhi. & Shri K.M. Gupta, Adviser (Liaison), ACC Ltd., New Delhi.
26.5.2002	Shri Abhijit Ghosh, Asstt. Vice President (Mktg.) Ambuja Cement Eastern Ltd., Kolkata. & Shri Binit Dutta, Manager (Logistics) Ambuja Cement Eastern Ltd., Kolkata.
26.5.2003	Shri G.K. Kanchan, Adviser (Transport) Gujrat Ambuja Cement Ex. Adviser Planning, Railway Board, New Delhi.
29.5.2003	Shri Naveen Chadha, President- Operations, ACC Ltd., Mumbai. & Shri A.K. Rajoria, Vice President, Tikaria Cement Works, Gauriganj, Sultanpur (UP)

Annexure 18

Date	Interviewee
29.5.2003	Shri S.B. Mathur, Adviser (Transport) ACC Ltd., Ex. GM/Central Railway, Mumbai & Shri K.M. Gupta Adviser (Liaison) ACC Ltd., New Delhi.
30.5.2003	Shri S.K. Chowdhary, Executive Director/Traffic, Railway Board, New Delhi.

Date	Seminar/Meetings
10.8.2002	Seminar on Cement Industry's Perspective, New Delhi.
20.5.2003	Meeting of Cement Industry with Member (Traffic) Railway Board, Ministry of Railways, New Delhi.

Annexure 19

Interview with Shri R.Partha Sarathy, Ex. Secretary General, Cement Manufacturers' Association (26.12.2002)

In order to make the railway service more user friendly, the Railways must do the following: -

1. *Rail Tariff of cement is about twice its cost to the Railways. The Railway mode is not exploiting it advantage fully because of : -*

a) Low efficiency.

b) Tariff Policy is not market driven.

c) The railway service is having low customer orientation.

d) There are too many hassles as compared to the roadways.

e) Infrastructure weakness in the Railways as:-

   (i) Funds crunch has retarded the development necessary to carry traffic.

   (ii) Infrastructure is inadequate to meet customers' growing expectations.

f) Break even points between Road and Rail regarding the leads of the cement traffic has shifted from 250-400 KMs. in the year 1996 to 450-550 KMs at present.

g) The roadways has flexible tariff and the railways has not such facilities.

2. *Railways' Customer Orientation has the following Problems*: -

a) Poor customer interface.

b) Low level of contacts.

c) Lack of quality services vis-à-vis roads:-

   - Uncertainty of Wagons availability.
   - Traffic restrictions.
   - Deliveries irregular.
   - Rigid tariffs.

d) Front-line managers:-

   - Unable to decide themselves.
   - Unaware of their cost/market forces.

3. *Customer irritants with the Railways are*: -

a) Enhancement of chargeable weight to carrying capacity +2 tonnes even if the loadability is doubtful.

b) Delays in implementation of ' policy/circulars at field level.

c) One sided approach: viz. (S. Rly. Circular regarding private investment).

d) Inadequate free time for increased rake length trains.

e) Demurrage when unloading is not feasible (no covers from rains).

f) Gauge conversion and Electrification cost charged to siding owner. There is no justification for it.

g) Burden of train examiner staff at sidings.

h) Due payments always delayed – Own Your Wagon Scheme, & Volume Discount Scheme.

i) Payment for claims – a big hassle.

j) Charging by longer routes due to BG conversion of M.G. routes.

4. *Inadequate Infrastructure:-*

a) Terminals need attention for modern handling.

b) Rail Terminals in poor shape – often lack:-

- Cover from rain.
- Warehousing.
- Inter-modal exchange facility.
- Modern wagons for the changing pattern of cement traffic.

c) Rail bulk terminal only in one city i.e. Mumbai.

d) More Bulk terminals needed.

e) Plants do not have mechanised loading arrangements.

f) Goods sheds have poor road access.

5. *The Railways need increased efficiency by*: -

(i) "Lean" yards.

a) No exchange yards.

b) Engine on Load with no shunter in siding.

c) Closed circuit operations.

(ii) Efficient Railway Terminals:-

a) Mechanized handling.

b) Warehousing.

c) Intermodal exchange.

(iii) Planning for changing pattern of the industry.

6. *Improvement in Rail infrastructure in Plants*: -

Modern operation for fast loading.

a) Full train length siding.

b) Investment in mechanisation of loading/unloading.

c) Longer trains- additional packing facility.

d) Special wagons for bulk.

e) Information Technology (IT) linkage with Railways.

7. *The Railways should plan <u>their</u> future strategy*:-

a) Changing operational techniques and planning the new infrastructure:-

- Bulk Movement and Bulk Terminals.
- Modern communications using IT links between the siding and the Railways.
- Special wagons- design and procurement.
- Needs for modern operation.
- Mechanised handling.

b) Finalise location of city freight terminals.

c) Modal interchange road, Inland water transport and coastal shipping.

8. *Better Customer Orientation*

a) Needs radical change to a commercial approach from a long standing Government approach.

b) Whole set of commercial manuals needs rewriting:-

- Why not incentive for faster loaders as a corollary to demurrage for the opposite.
- Why levy wagon registration fee from major & regular rail users?
- Over & under-loading charges where no weighment facility exists.

9. *Promoting Private Participation:-*

Need for both Railways and investors:

- Transparency.
- Level playing field-not one sided policy as made by Southern Railway.
- Adequate return for investors.
- Policy- Win-Win, Sound and Long-term.
- Sharing the gains fairly.

10. *Prevent Nagging delays:-*

a) These are in-built in the mammoth bureaucratic set up. At times, finance role delays the process.

b) "Where immediate gets attention and not the important" – Ackworth 1929.

c) Front line commercial staff have no delegation of powers e.g.:-

- Station to Sation rates.

d) Gaps between promise and action.

e) Payment delays:-

- Vitiates sound marketing policy.
- Erodes customer confidence.

11. *To Sum Up:-*

a) User friendly Railways:

- Has high degree of customer orientation.
- Has market responsive tariff.
- Attracts investment by fair partnership.

Annexure 20

Interview with Shri Vivek Agnihotri & Shri K.M. Gupta (11.3.2003)

1. Freight rates of roadways are very flexible. Railways' rules for granting Station-to-Station rates and Volume Discount Scheme are there but it takes a lot of time to get the discount from these schemes.
2. The demurrage rules of the Railways at the loading and unloading points add to the cost of transportation. At the loading points, particularly for old plants with lower capacity, the same demurrage rules are applied as for the new plants with higher capacity. Demurrage rules should take into account the constraints of the customers. At the unloading points, demurrage accrues particularly during monsoon season because the unloading tracks are not provided with covered platforms. The approach roads, at the unloading points and the circulating areas are also not in good condition, resulting in unloading delays. Subsequently, extra efforts have to be made by the companies even for a partial waival of the demurrage charges accrued.
3. High capacity road trailers and Volvo trucks are now available which move during night and distribute cement during the day. These are more economical than Railways.
4. Small plants produce cement at the rates of 2000 tonnes per day. However, the Railway rakes have a capacity of about 2400 tonnes, each. A free time of only 8 to 10 hours is available for loading. It is not possible to load a rake during this time. Since the loading and packaging is mechanised, it is difficult to stack the cement bags before loading. Doing so would also add to the costs.
5. In the ACC cement plant at Lakheri, there are three interchange tracks outside the private siding. The plant does not place more indents as the Railways can place more than one rake, for loading, at a time.. Therefore, the rate of supply of rakes to any siding owner must be decided in advance, in consultation with the customers.
6. Over the year, a rake load of cement has gone up from 1400 tonnes to 2400 tonnes but, the loading facilities in the cement sidings have remained the same. The Railway should take this factor into account for fixing the free time for loading of rakes.

7. The new and large cement plants, move more traffic by rail as the entire quantity can not be loaded by road trucks.
8. Wagon supply is not assured by the Railways, therefore, their reliability is not good.
9. The rail freight is more expensive, particularly, for short leads. For long leads also, the roads remain cheaper up to a distance of 300 KMs.
10. Unloading at Terminals

    The Railway must take into account the unloading capacity of the various customers. The wharfage rules must be applied accordingly.

Annexure 21

Interview with S/Shri Abhijit Ghosh & Binit Dutta (26.5.2003)

Ambuja Cement Eastern Ltd., have been dispatching cement from their Sankrail unit near Kolkata, to New Jalpaiguri, Malda and Guwahati. They have been using waterways as a mode of transport. Their difficulties, in switching over to rail movement, are: -

1. There are heavy restrictions in the movement of road trucks in Kolkata area particularly during daytime. As a result, loading of cement is possible only at night. Thus more time is taken for loading and demurrage charges also accrue.
2. The goods shed staff are not friendly. They dot not give a forecast of the time when the wagons will be supplied.
3. The Railways rules are complicated and non-transparent. The cement companies have to employ their senior officers, with sufficient knowledge of the Railway rules, in order to look after the wagon supply arrangements and also the interests of the company for rail movements.
4. Claims cases are badly delayed on the Railways, as Railways do not accept their liability in most cases. In case of roadways, there is no complication. The value of the contents lost is recovered from the freight payment of the road contractor.
5. The rakes supplied by Railways carry 2300 tonnes each while the demand in most of the areas is not more 1500-2000 tonnes at a time.
6. There are frequent restrictions on movement of rail traffic towards the North East region, particularly, for destinations beyond New Jalpaiguri.

Annexure 22

Interview with Shri G.K. Kanchan (26.5.2003)

1. There is heavy delay in processing the cement companies' requests for Station-to-Station rates.

2. For availing the benefit of the Volume Discount Scheme, the Railway rules are highly bureaucratic. It prevents the customers from availing the due benefits. As per the railway rules, an over charge sheet is issued for each railway receipt and only then the refunds can be made by the railway. Each train is covered by issue of about 15 to 20 railway receipts. In a six months' period, there may be as many as 1500 railway receipts, which have to be connected to issue a "certified overcharge sheet". This commercial formality is taking a very long time.

   As a result of this type of system, M/S Ambuja Cements are having arrears of Rs. 1.6 crores as refund due under the above scheme. This payment has not been made by the Railways for more than a year by now.

3. Railways are giving a 10% concession for loading in open wagons. This is an adhoc percentage without having any rationale. The cement companies are paying 18% of the freight, on an average i.e., for arranging tarpaulins, labour and security etc. for loading in open wagons. The rebate granted is, therefore, inadequate.

4. Payments by Cheque - The Railway rules require a bank guarantee for an amount equal to the period of 7 days peak transactions to permit freight payments by cheque. This is unfair because only the reputed companies' cheques are accepted by Railways. In case any cheque bounces, there are sufficient alternatives available with the Railways to recover the money from the concerned company.

   Similarly, for getting a refund under the Station-to-Station rate scheme, a bank guarantee is required.

5. Claims: In a number of cases, the Railways are not able to settle the claims within a period of 2 years. As a result, most of the cases are being filed before the Railway Claims Tribunal by the cement companies. This process further delays the settlement of claims of cement companies and, at the same time, 90% of the cases of claims are being decided against the Railways by the Railway Claims Tribunal. Railway Claims Tribunal is

awarding even interest payment against the Railways as the payments are delayed by the Railways.

Therefore, the Railway should ensure that the claims are settled within a maximum period of 3 months.

6. The relations of cement industries, with the Railways, are very old. Still, the Railways are not able to trust the cement companies. The dealings are not transparent and the decisions are not logical.

7. 'Own Your Wagon Scheme' - This scheme has been a failure because the Railways did not plan it properly. According to this scheme, the Railways have to pay a 16% return for 10 years and 1% for another 10 years. The actual life of a wagon is about 30 to 35 years. So no return is payable beyond 20 years.

8. The Railways provide a guarantee for supply of a certain number of rakes per month to the party, who has entered into a contract with the Railways for owning such wagons. Once a guarantee has been given, there should be no restriction on the movement of such rakes. However, the Railways provide wagons subject to their operating restrictions.

9. The Railways do not pay any liquidate damages if they fail to supply wagons.

10. Some of the zonal railways like Eastern and South Eastern are causing problems for cement companies and are levying idling charges on wagons. These charges have not been defined properly in the scheme.

11. As per rules, no lease charges should be paid for the idling period. However, the Railway should certify that the wagons are not required, any where on the Indian Railways, before they levy idling charges.

12. The Railways are reducing payment of the lease charges by 3% in lieu of the service charges. These charges are excessive.

    Due to the above reasons, 'Own Your Wagon Scheme' has been a failure. No cement company is coming forward to adopt this scheme, even when they are in dire need of wagon supplies.

13. The Railways have introduced a system of demurrage credit/debit hours for loading of steel consignments by the steel plants. However, despite repeated requests, the same system has not been introduced for the cement plants.

14. The Commercial and the train examination staff in the sidings, are posted by the Railways. This cost is being debited to the siding owners. Despite posting of these staff at the cost of the siding owners, the Railways are not issuing clear railway receipts.

15. Certain groups of customers have been exempted from the wagon registration fee. No wagon registration fee should be charged from the siding owners also.

16. As per the Indian Railway Act, there are heavy penalty charges for over loading the wagons. Even the earlier British Act, applied by the Railways in India, was more friendly towards the customers than the present Act. Indian Railways need to make the Act customer more friendly.

17. Carrying capacity of wagons - This has been fixed as CC+2 tonnes (Carrying Capacity + 2 tonnes) for coal loading. However, for certain qualities like the coal from Chircha Collieries in the South Eastern Coal fields Ltd., physical loading to this extent is not possible. The matter has been under consideration of the Railway Board for years together but they have not taken any decision so far.

    This gives a feeling that the Railways do not want to revise even the wrong orders issued by them.

18. The Railways have reduced their freight rates on cement traffic from 1.4.2003. However, the rates are still extremely high as compared to the roadways. The following comparative rates of rail and road per tonne proves this point.

From Ropar to	Freight By Rail(Per tonne)	Freight By Road(Per tonne)
♦ Saharanpur	Rs. 236.80	Rs. 201.65
♦ Jammu Tawi	511.30	490.00
♦ Ambala Cantt.	177.80	113/05
♦ Rishikesh	317.10	289.00
♦ Ghaziabad	370.60	303.62
♦ Shakurbasti	351.00	269.78
♦ Meerut	370.60	297.98

The above figures show that the Railways are still charging about 20% higher for most of the destinations loaded from Ropar. For short lead destinations like Ambala, the cost of movement by rail is higher by 40% over the road freight.

Annexure 23

Interview with Shri Naveen Chadha & Shri A.K. Rajoria, ACC

(29.5.2003)

1. The Railway rules are highly complicated and are not customer friendly.
2. The reliability of rail transport is not good. The cement companies are hesitant to send full rakes of cement to small markets where quantities, of the order of 2200 tonnes, if sent into the market, can result in severe fluctuations in the market price of cement. In bigger cities however, the market rates are not affected by receiving large quantities of cement but the cost of secondary transportation from the railhead to the stockyard is high because of truckers' unions. However, when the cement is to be moved by road from the stockyard/dump yard to the customers' premises, there are no truck unions which can come in the way. The road trucks deliver the cement directly to the customers' warehouse. The company warehouse is utilised to store some cement to deal with the market fluctuations. The warehousing cost of the cement companies is quite substantial i.e. Rs. 90 to 100 per tonne.
3. In areas like Jabalpur, wagon supplies are is not adequate. Even then, the cement companies are forced to move by rail, as adequate road transport is also not available.
4. The approach of the railway staff and officers at the lower levels, is not positive. For almost three years, an amount of Rs. 3.5 crores, given by ACC to Northern Railways, has not given any return to the company, as the Railway is not commissioning their siding at Gauriganj near Rai Bareilly for reasons, which are not convincing.
5. The settlement of claims is very much delayed as no decisions are taken, in time, by the Railways.
6. In some Railways like Central Railway, they take a long time to decide cases of Station-to-Station (STS) rates. They neither say 'Yes' nor say 'No'. In certain other cases, the decision time is more than six months. When a decision to grant Station-to-Station rates is taken by the Zonal Railways, the concession is not given from the date of application by the customer but only from the date of decision given by the Railways.

7. The Railways are not consistent in the application of their rules as different Divisions are interpreting the rules in different manners.
8. Cement companies would like to move more cement by rail if the Railways become friendly and reduce detention, demurrage and other charges.

Annexure 24

Interview with Shri K.M. Gupta and S.B. Mathur, Adviser (Transport) ACC Ltd.

1. The cement plants are setting up grinding units near the market consumption centres and clinker plants near lime stone deposits. The leads for transporting cement are, therefore, coming down.
2. The movement of cement has been decontrolled and the cement companies are competing with one and another. They are now free to move cement wherever they want. This has been brought down the leads further
3. The roadways are more attractive for smaller leads up to 300 KMs. The Railways, in their budget 2003-04, have given some incentives for movement of cement upto 100 KMs leads. However, this incentive is not adequate because the condition of roads has improved. High capacity road trucks also compete with the Railways.
4. The rates of movement by road are decided on the basis of the transport costs per truck but, in the case of Railways, the cost is decided on the basis of per tonne of the cement carried by railway wagons. Since the truck transporters overload their trucks despite bans by the State Governments on overloading, their trucks become more economical. The Railways are finding it difficult to compete with roadways because they cannot afford to overload their wagons on safety considerations.
5. The Station-to-Station rates should be effective from the date of receipt of the application from the party.
6. 'Own Your Wagon Scheme' was started on 1994. In this scheme, the quarterly payment of lease charges due has to be made by the Railways. In practice, this has never been followed.
7. The zonal railways are levying idling charges on wagons in an arbitrary manner. Hence the purchase of wagons under the 'On Your Wagon Scheme' is not being favoured by the cement companies.
8. The rate of return on the wagons, as calculated by the Railways, is based on the: -
   a) Public Lending rate determined by Reserve Bank Of India.

b) Rate of depreciation of assets as approved by the Income Tax Department.

The documents to prove these rates, leviable at any time, are to be furnished by cement companies. These rates have to be obtained from the concerned department of the Govt. of India. The Railway finance department is not clearing the proposals because the parties are not able to get the certificates from the RBI and from the Income Tax department in time.

9. Volume Discount Scheme is vague. It has been wrongly interpreted by the Central Railway who is insisting upon the cement companies to offer 5% traffic over and above the benchmark fixed as per norms. This is being applied even to the Premier Customers also. According to the cement companies, this provision is not applicable to the Premier Customers but the Central Railway is not agreeing with them.

10. The Station-to-Station (STS) rate discount and the volume discount under the Volume Discount Scheme should be given at the time of issue of the railway receipts.

Annexure 25

Interview with Shri S. K.Chaudhary, E.D./Traffic Commercial (Rates) Railway Board, New Delhi (30.5.2003)

1. Railway Board is taking action as per Para 100 of Part II of the speech of the Railway Minister in the Railway Budget for 2003-2004. To give relief to the siding owners, zonal railways have been asked to undertake a thorough review to reduce the cost of railway staff being charged by private siding owners in phased a manner. A circular has also been issued to the zonal railways by the Railway Board to this effect.
2. In order to develop full rake sidings for rake load traffic including cement, the Railway Board is thinking of giving benefit of charging on through distance basis to the dead end of the siding to the siding owners, in case, they modify their lay out and remodel their siding/yard suitably and also have the electrification of the siding done in Railways' electrified areas so that the placement/removal can be done by the train locomotives.
3. The classification of cement has been reduced from 140 to 135 by one stage, thereby, reducing the freight rate by 3.7 per cent.
4. For all traffic booked up to a distance of 100 kilometres, 50% freight concession will be allowed for traffic booked up to 50 kilometres, followed by 25% concession for traffic from 51 kilometres to 75 kilometres slab and 10% concession for the 76 kilometres to 90 kilometres slab. For each of the slabs, the freight rates, per tonne per kilometers, would be the same.

   The 'To-Pay' surcharge on freight traffic has been reduced from 15 to 10 per cent for coal and from 10 per cent to 5 per cent for other commodities. (Para 96 of the Budget)
5. The benefit of trainload rate for two point rakes, will now be granted, from 1/4/03, not only up to the common point of the movement but up to the entire distance of transportation. (Para 98 of the Budget)
6. Clubbing of consignments, in a wagon, has been allowed up to 12 consignments on payment of Rs.100 for every additional railway receipt to be issued by the railway. Before 1/4/03, only up to 6 consignments were permitted to be clubbed in a Broad Gauge wagon. (Para 99 of the Budget)

7. Customers generating freight earnings of more than Rs.25 crore freight traffic per annum, originating from the siding, are the Premier Customers of the Railways. Such customers are now being granted a freight rebate of 2% for every Rs.5 crore of net additional originating freight earnings as compared to some in the previous financial year, generated for the Railways.

The rebate under the scheme will be granted, in addition to any other freight concession, availed by them. This applies to commodities placed in class 135 and above. (Para 100 of the Budget)

8. Measures To Improve Railways' Share In Warehousing

(i) Railways will be entering into a Memoranda of Understanding with the Central Warehousing Corporation as its strategic partner, for the development of integrated rail side warehouse complexes at 22 locations in India. Such a warehouse has already been provided at the Whitefield terminal at Bangalore. (Para 27 of the Budget)

(ii) The General Managers of the zonal railways have been given more powers by offering concessions ranging from 10 to 24 per cent on station-to-station rates. The consignees, as well as the consignors, have now been covered in this scheme. (Para 28 of the Budget 2003-04)

(iii) The tariff, in the freight structure, has been modified to provide a smooth reduction in rate per kilometre with the increase in distance. Thus the freight rates for distances ranging from 101 kilometres to 165 kilometres and 501 kilometres to 575 kilometres, for base class 100, are higher and for other classes are, marginally, lower as a result of the decision taken in the budget 2002-03. (Para 87 of the Budget)

(iv) The number of classes for freight rates has been reduced to 32 from 59. Class 300 was the highest class. The freight rate for the highest class was earlier 8 times higher than the lowest class. This ratio has now been reduced to only 3.3. (Para 88 of the Budget speech 2002-03)

9. Railways have now recognised that they have out priced themselves in the freight transportation scheme, thereby, making themselves uncompetitive in the transport market. This has happened because the Railways have been subsidising passenger traffic by increasing the freight rates.

10. Cement bags are now charged at the rate of 75 gm per bag instead of 100 gm per bag as charged earlier. The Railways are now evolving innovative

pro-customers approaches so that the share in the railway freight traffic improves.

Annexure 26

Seminar on Cement Industry's Perspective on 10th August 2002

By Shri A.V. Srinivasan, Secretary General, Cement Manufacturers' Association

1. Railways are losing ground with cement industry due to:

a) High freight costs as a result of subsidising other commodities and passenger fares.

b) Additional handling involved in loading and unloading operation pushes up railway freight costs.

2. What drives Low Scenario

a) Rail advantages not exploited.

b) Rail freight does not always reflect costs.

c) Losses due to multiple handling in rail.

d) Road freight flexible and NOT rail freight.

e) Road movement getting more efficient.
Multi axle, better roads, fuel efficient, door-to-door service etc.

f) Road freight now more competitive.

g) Response to customer needs.

- Railways ⇒ Low
- Road ⇒ High

h) Responsibility for damages in transit;

- Road ⇒ Borne by the transporters
- Rail ⇒ Normally not borne by Railways

i) Road transport is much more hassle-free than rail.

3. Railways long term business perspective; In this direction, the Railways are asking the cement industry to create and develop private sidings and own their wagons. These proposals are not in the interest of cement industry:

4. What Railway should do to get an appropriate share:

a) Adopt Customer oriented policies

- Make end cost to the consumer comparable with road- including handling charges
- Make rail freight competitive, even upto 150 kms, since leads are declining gradually.
- Abolish cross subsidy provided for passenger fares

Remove too many procedural and bureaucratic delays in dealing with schemes like Station-to-Station (STS), Volume Discount Scheme (VDS), Own Your Wagon Scheme (OYW), claims, etc.

b) Adopt Advance Planning for say – 10 years at least.

- Identify and develop modern cement terminals with mechanised loading/unloading at major market centres like- Delhi, Chennai, Kolkata, etc.
- Develop bulk terminals at suitable locations, since 50% cement will be moved in bulk in future.

c) Adopt closed circuit operation - Engine attached on load.

- Engine remains attached
- Links production & market centres
- Movement in bulk to metro cities

d) Translating its inherent cost advantage over road transport to benefit all round economic development on cost competitiveness for industry and economy as a whole.

Annexure 27

Meeting of the Cement Industry with Member (Traffic) Railway Board (20.5. 2003)

In this meeting, following issues were raised: -

1. Shortage of wagons in Jabalpur area and in the newly created Bilaspur zone.
2. Station-to-Station Rates Scheme: A review of the experience of the operation of this scheme is required, especially, with a view to:
   a) Expediting sanctioning procedures. Applications of Financial Year 2002-2003 are still to be approved in some cases;
   b) Establishing Benchmarks which can enable members to utilize the maximum limits of the concession available under the Scheme both under retention as well as Incremental traffic; and
   c) Including dispatches by mini rakes and 'BOX' rakes loaded in the event of non-supply of covered rakes.
3. Two Point Destinations
   a) More pairs of points to be added in the existing approved list.
   b) The benefit of rake load should be made available when two point rakes are permitted at "Railway" convenience irrespective of whether these destinations are from the approved list or not. BCN wagons should be permitted for 2-point destinations in slack season as well as in the non-slack season and the benefit of the rake load rate should be made available.
4. a) Volume Discount has to be given irrespective of the Retention Discount.
   b) Volume Discount and Retention Discount for the premier customers.
5. Mini rakes should be permitted to ply over a distance of 500 Kms against 300 KMs at present.
6. Separate quota should be given for cement loading from different zonal Railways to N.F. Railway destinations.
7. Adequate number of terminals with proper godown facilities should be developed by the railway for handling of cement traffic.

Glossary Of Terms Used

Term	Explanation
Cement Clusters	An area where large number of cement manufacturing plants are located due to availability of cement grade limestone in that area.
Class	A term used for classifying freight traffic into different groups. The higher the class of any commodity, the higher the freight rate.
FOIS	Freight Operations Information System which gives real time, online, information about the movement of freight trains for trains loaded throughout the Indian Railways.
Golden Quadrilateral	The railway routes and the diagonals connecting the four major metropolitan cities in the country viz., Delhi, Mumbai, Kolkata and Chennai
Landed Price	This includes: • Freight • Handling charges at the destination • Demurrage and shunting charges • Transhipment charges • Secondary freight
Line/Route Capacity	The number of trains which can be run in any section of the railway in a period of 24 hours.
Mini Rake	A rake consisting of only 20 covered eight wheeler wagons instead of 38-40 in the normal course.
Operating Restrictions	These are restrictions imposed by the Railways to control loading of freight traffic for a certain area due to day-to-day operational problems posed on certain routes or at certain terminals.
Originating Earnings	Total earnings of freight traffic which originate from each station on the Railways
Own Your Wagon Scheme	Scheme under which the customer owns the wagons which are used by the Railways to get an assured supply of wagons or give him a return on his investment.
Piecemeal traffic	Traffic offered by customers in wagon loads for various destinations

Private Siding	A railway siding which is owned by a consignor/consignee under an agreement with the Railways for placement/removal of wagons from the siding.
Split Grinding Unit	A grinding unit where cement is made after receiving clinker from the mother plant which is located at a different location than the cement grinding unit.
Station-to-Station Rate	A concessional rate offered by the Railways from a specific originating station to a specific destination station to encourage movement of traffic by rail.
Telescopic Rate	The railway freight rates which decrease as the lead of the traffic increases.
To Pay	A consignment for which a higher freight rate has to be paid by the consignor/consignee at the destination.
Total Logistics Carrier	Arrangements made by the transport organisation to ensure door-to-door delivery of the consignment for each customer.
Trainload freight	Lower freight rate classification if the customer offers a trainload which comprises of about 2200 tonnes of payload.
Two-Point Block Rake	A trainload of wagons having two destinations.
Volume Discount Scheme	A customer gets discount on the freight rate if he loads more traffic by rail than he did in the past
Wagonload Freight	Higher freight rate classification if the consignor does not offer a quantity which can be classified as trainload i.e., consignments having pay load less than 2200 tonnes.